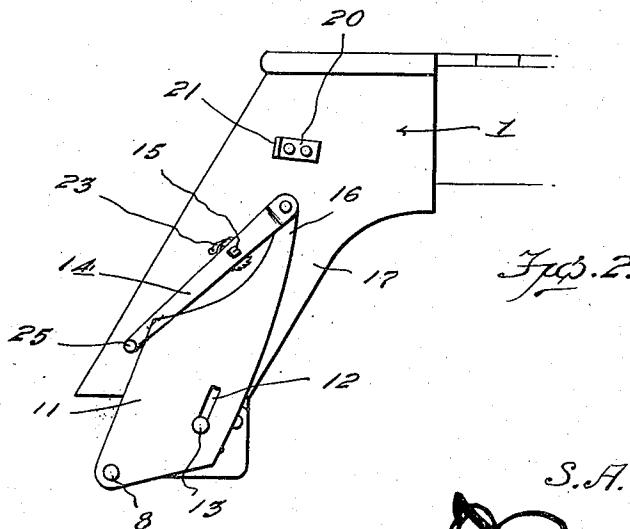
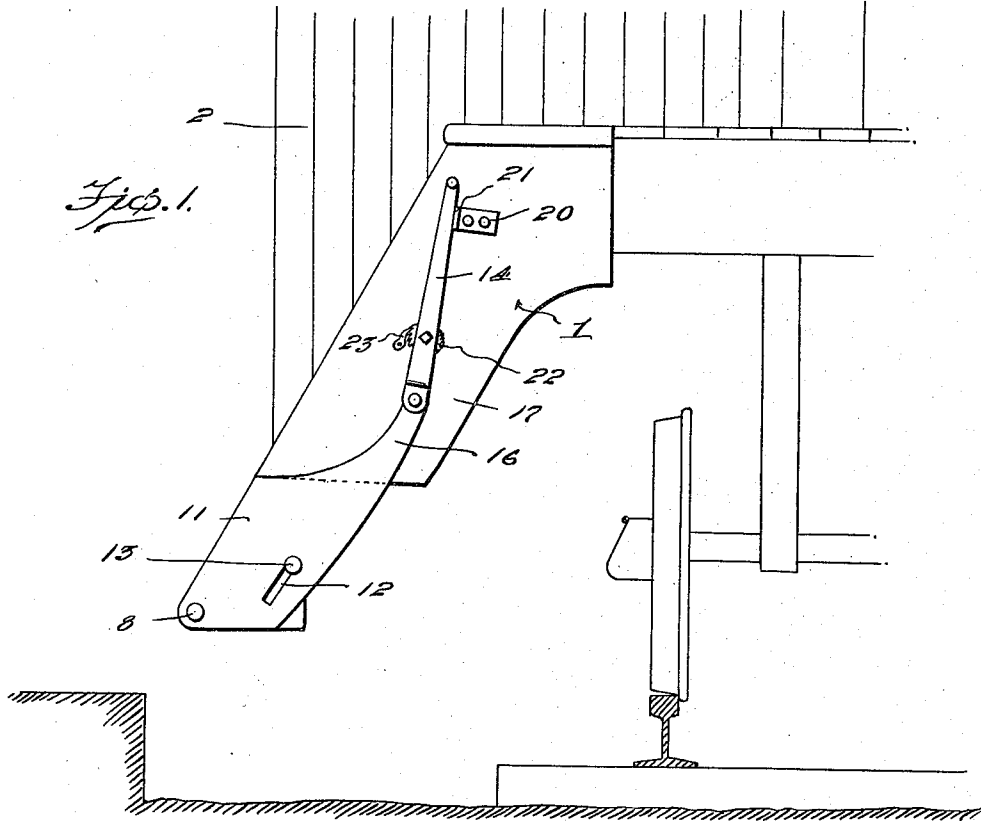


1,156,752.

Patented Oct. 12, 1915.
2 SHEETS—SHEET 1.



Witnesses
[Signature]
Rohr Meyer

Inventor
S. A. Campbell.
[Signature]
Attorney

S. A. CAMPBELL.
FOLDING CAR STEP.

APPLICATION FILED MAY 29, 1915.

Patented Oct. 12, 1915.

2 SHEETS—SHEET 2.

1,156,752.

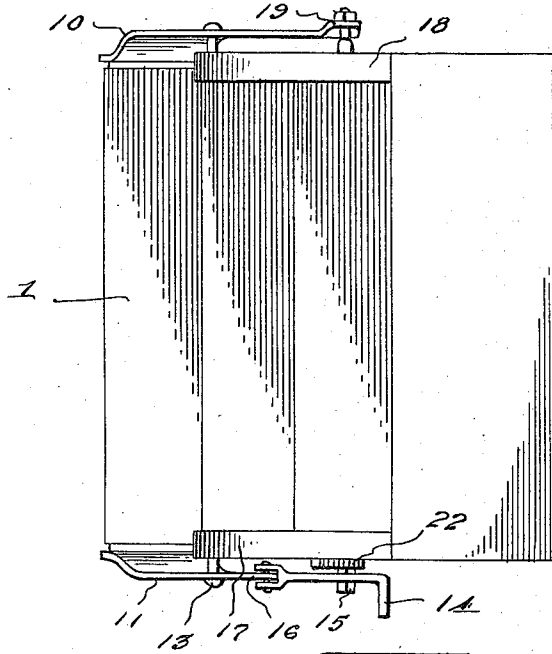


Fig. 3.

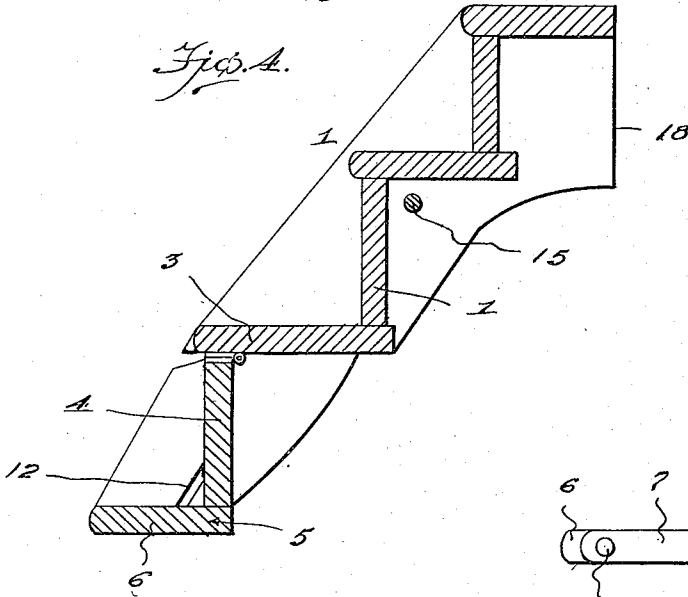


Fig. 4.

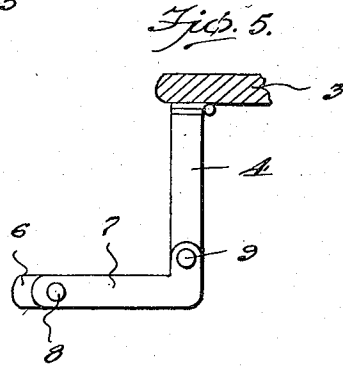


Fig. 5.

Witnesses

Robert Meyer.

Inventor
S. A. Campbell.

By *A. H. Campbell, Jr.*

Attorney

UNITED STATES PATENT OFFICE.

SOCRATES A. CAMPBELL, OF MOUND VALLEY, KANSAS.

FOLDING CAR-STEP.

1,156,752.

Specification of Letters Patent.

Patented Oct. 12, 1915.

Application filed May 29, 1915. Serial No. 31,276.

To all whom it may concern:

Be it known that I, SOCRATES A. CAMPBELL, a citizen of the United States, residing at Mound Valley, in the county of LaBette and State of Kansas, have invented certain new and useful Improvements in Folding Car-Steps; and I do hereby 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.

This invention relates to auxiliary folding car steps for attachment to the ordinary approaching or alighting flight of steps of railway cars, and the primary object of the invention is to provide an auxiliary step, which is hingedly connected to the under surface of the lowermost tread of the usual flight of steps, so that it may be moved downwardly into an operative position, or upwardly into a folded position out of an obstructing position during the travel of the car.

Another object of this invention is to provide a novel form of means for moving the foldable auxiliary step into or out of an operative position, which means is comparatively simple in construction and easy to manufacture.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters designate like or corresponding parts throughout the several views, and in which:—

Figure 1 is a side elevation of a flight of steps, showing the improved folding step attached thereto and in an operative position, Fig. 2 is a side elevation of the steps, showing the improved folding step attached thereto in a folded position, Fig. 3 is a top plan view of the steps, showing the auxiliary step folded, Fig. 4 is a cross sectional view through the flight of steps, showing the auxiliary step extended or in an operative position, and Fig. 5 is a view on the line 5—5 of Fig. 4.

Referring more particularly to the drawings, 1 designates an ordinary approaching or alighting flight of steps carried by a railway car 2. The lowermost tread 3 of the

flight of steps 1 has the riser 4 of an auxiliary step structure 5 hingedly connected thereto for folding engagement with the under surface of the tread 3. The riser 4 has the auxiliary tread 6 pivotally connected thereto by means of angled plates 7, which plates have the outer ends of their horizontal arms secured to the tread 6 by means of any suitable type of pins or members 8, while the substantially vertical arms of the angled plates 7 are pivotally connected to the edges of the riser 4 by means of pins 9. The pins 8 also pivotally connect plates 10 and 11 to the tread 6, which plates are provided with slots 12, in which pins 13 are slidably seated. The pins 13 are connected to the ends of the riser 4 for moving the riser into a folded position upon the pivotal movement of the lever 14, which is pivotally carried by a crank shaft 15. The lever 14 is pivotally connected to a projection 16 which is formed upon the side plates 11 and it is connected to the crank shaft 15 for rotating the crank shaft upon movement of the lever. The crank shaft 15 is rotatably mounted in the side plates 17 and 18 of the flight of steps 1, and it has an extension 19 which is formed upon the plate 10 connected to the crank portion formed upon its end opposite to the one to which the lever 14 is connected, and upon the opposite side of the flight of steps, as is clearly shown in Fig. 3 of the drawings. The side plate 17 has an angled stop plate 20 secured thereto, the angled side 21 of which provides a rest which is engaged by the handle end of the lever 14 when the auxiliary step is in an extended position.

A ratchet 22 is mounted upon the crank shaft 15 and the peripheral ratchet teeth thereof are engaged by a pawl 23, which is pivotally supported by the sides 17, for holding the lever 14 in a downward position and the auxiliary step 5 in a folded position, as is indicated in Fig. 2 of the drawings, against accidental extending movement of the extension relative to the lever 14. When the auxiliary step 5 is in folded position during the travel of the car upon which it is mounted, the lever 14 is in a downward position, as indicated in Fig. 2 of the drawings. When it is desired to extend the auxiliary step 5, the hand grip 25 of the lever 14 is engaged and the lever is moved downwardly sufficient to release the pawl 23 from engagement with the ratchet

22, after which the lever is moved upwardly to the position indicated in Fig. 1 of the drawings, where it is held by engagement with the outstanding arm or side 21 of the angled stop plate 20, which holds the step in an extended position. By the provision of the slot 12, the proper movement of the riser and tread sections 4 and 6 respectively will be permitted, for causing them to move into facial abutment with each other when in a folded position.

From the foregoing description taken in connection with the accompanying drawings the advantages of construction and of the method of operation of the improved folding car step will be readily apparent to those skilled in the art to which this invention appertains and, while in the foregoing description, the principle of the operation of this invention has been described together with various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. The combination with an ordinary permanent flight of steps of a railway coach, of a riser hingedly connected to the under surface of the lowermost tread of said flight of steps, a tread pivotally connected to said riser, a pair of plates pivotally connected to said tread and said riser and extending upwardly along the sides of said flight of

steps, extensions formed upon said plates, a crank shaft rotatably carried by said permanent flight of steps, a lever carried by said crank shaft, said lever being pivotally connected to one of said plates for moving said steps into or out of a folded position upon movement of the lever, the other of said plates being operatively connected to the crank portion of said crank shaft.

2. The combination with an ordinary permanent flight of steps of a railway coach, of a riser hingedly connected to the under surface of the lowermost tread of said flight of steps, a tread pivotally connected to said riser, a pair of plates pivotally connected to said tread and said riser and extending upwardly along the sides of said flight of steps, extensions formed upon said plates, a crank shaft rotatably carried by said permanent flight of steps, a lever carried by said crank shaft, said lever being pivotally connected to one of said plates for moving said steps into or out of a folded position upon movement of the lever, the other of said plates being operatively connected to the crank portion of said crank shaft, means for limiting the upward movement of said lever, and means for holding said lever in a downward position against the weight of said foldable step.

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

SOCRATES A. CAMPBELL.

Witnesses:

A. MORRIS,
HILDA HOLM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."