

Sept. 9, 1924.

M. PERKINS

1,507,792

DROP STEP

Filed Feb. 9, 1924

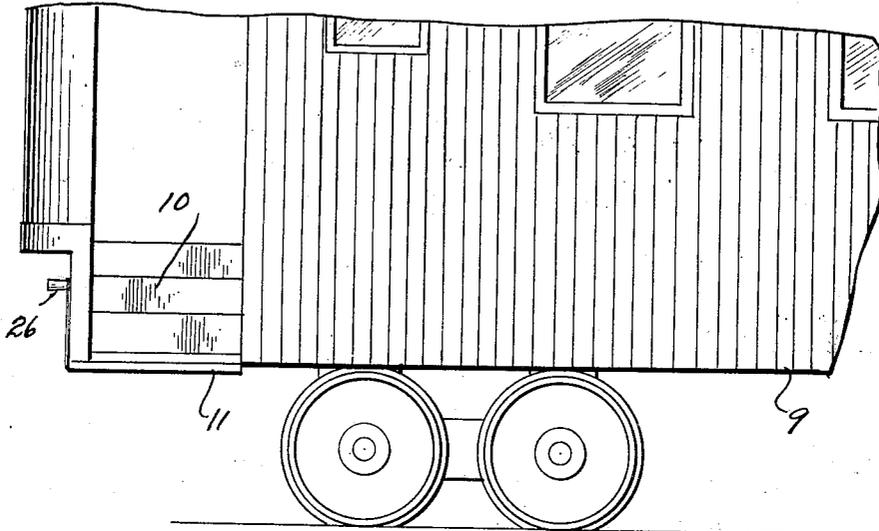
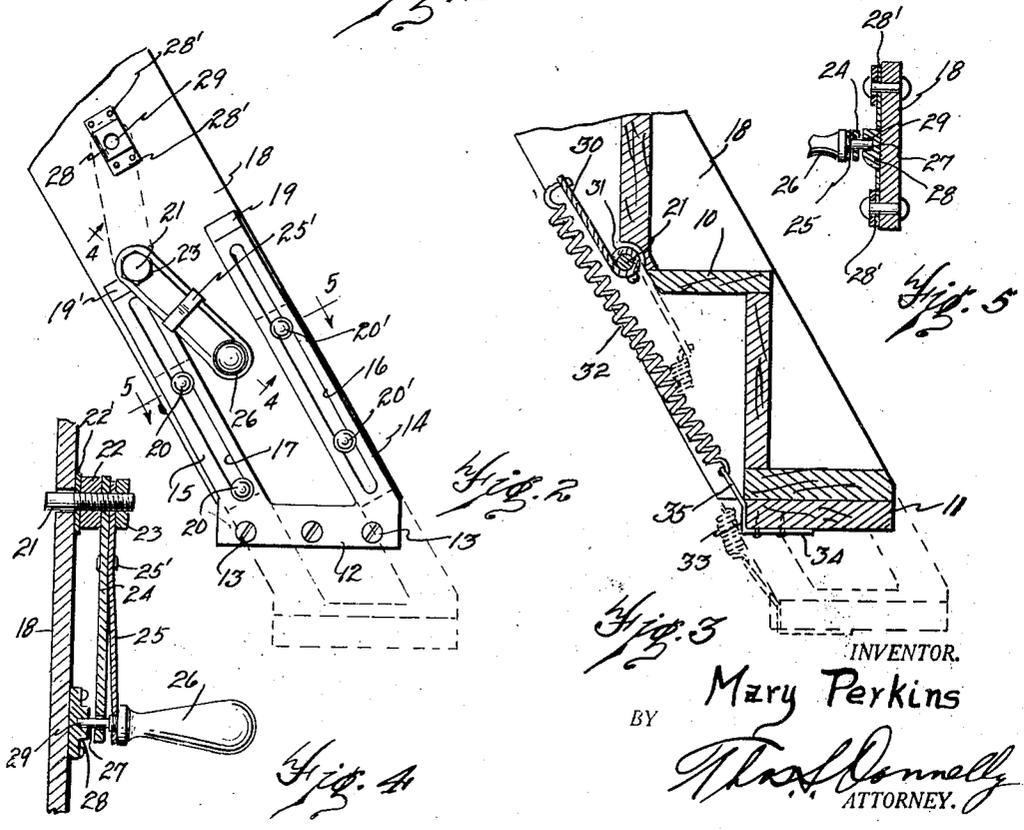


Fig. 1



INVENTOR.

Mary Perkins

BY

Max Donnelly
ATTORNEY.

UNITED STATES PATENT OFFICE.

MARY PERKINS, OF YPSILANTI, MICHIGAN.

DROP STEP.

Application filed February 9, 1924. Serial No. 691,617.

To all whom it may concern:

Be it known that I, MARY PERKINS, a citizen of the United States, residing at Ypsilanti, in the county of Washtenaw and State of Michigan, have invented a new and useful Improvement in a Drop Step, of which the following is a specification.

My invention relates to a new and useful improvement in a drop step adapted for use on passenger cars and the like with which it is necessary or desirable to use a foot stool to afford a stepping member for passengers alighting from and mounting to the steps of the car.

An object of the invention is to provide a moveable step attached to the car which may be moved out of position when desired and readily placed in operative position so as to eliminate the necessity of using the stepping member which is detached from the car.

Another object of the invention is the provision of a moveable step provided with means for quickly and easily moving it into and out of operative position and with means for locking the step in either position.

Another object is the provision in a device of this class of means for attaching the moveable step to the car so as to render it easily moved and at the same time afford a rigidity of structure which will make the moveable step a strong and safe one for the purposes desired.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood from a reference to the accompanying drawings which form a part of this specification and in which,

Fig. 1 is a fragmentary side elevational view showing the invention applied to a car,

Fig. 2 is a side elevational view illustrating the supporting means used in the invention,

Fig. 3 is a central sectional view of a set of steps showing the invention applied,

Fig. 4 is a sectional view illustrating the locking means used in the invention, and,

Fig. 5 is a sectional view taken on substantially line 5—5 of Fig. 2.

The invention is adapted for use with a car 9 having steps 10, and in its preferred form comprises a step 11 having secured to opposite sides thereof a supporting member

comprising a substantially U-shaped member having the bight 12, thereof, which is fastened by suitable screws or bolts 13 to the step 11, in angular relation to the legs 14 and 15. The legs 14 and 15 are provided respectively with elongated slots 16 and 17 in which engage, respectively, bolts 20 and 20' which are fastened in the side wall 18 of the steps, there being positioned between the legs 14 and 15 and the wall 18 wear strips 19 and 19' which are made from some suitable metal. Projected through the wall 18 is a bolt 21 having a lock nut 22 bearing against a washer 22'. A nut 23 serves to retain a handle 24 in position on a square portion of the bolt together with a leaf spring 25 which is bound to the handle 24, intermediate its ends, by a suitable clip 25'. The leaf spring 25 is attached at one end to a handle 26 from which projects a stud 27. Mounted on the member 18, are abutment blocks 28 from each of which projects wings 28' through which bolts may be passed to secure the blocks to the member 18. Each of the blocks 28 is provided with a pocket 29 in which the stud 27 is adapted to engage.

An arm 30 is provided and curled to form a knuckle which embraces the bolt 21 at the center thereof, a suitable set screw being projected through the knuckle to engage the bolt 21 for preventing a turning of the knuckle about the bolt. Secured to the free end of the arm 30 is one end of a spring 32, the opposite end of which is secured to an angularly turned portion 35 of a strap 33 which has another angularly turned portion adapted to engage the under surface of the step 11, being attached thereto by suitable screws. The arm 35 is at an angle to lie in alignment with the spring 32.

In operation, when the step 11 is moved to inoperative position, as shown in full lines in Figs. 1, 2 and 3, the handle 26 is moved to the position clearly shown in Fig. 2. This causes the arm 30 to move to the position shown in Fig. 3, thereby causing the step 11 to engage the under surface of the lower permanent step of the car. The stud 27 then engages in the pocket of the lower abutment thus securely locking the step in inoperative position. The leaf spring serves to force the stud into the pocket of the abutment and when it is desired to move the handle to effect a different positioning of the step 11 the handle is pulled outwardly from the wall 18 so as to disengage the stud from

the pocket of the abutment. Upon a turning of the handle the bolt 21 is turned, carrying with it the knuckle so as to cause the arm 30 to swing. When the handle is turned to place the step 11 in operative position the same is in the position shown in dotted lines in Fig. 2, and in Fig. 3. The handle then is again locked by the entry of the stud into the pocket of the upper abutment member.

The structure as shown is considered to be a durable one and it is evident that the step may be quickly and easily moved from its different positions. When the step is in inoperative position the spring 32 is under tension, and when the step is released for movement to operative position the same moves by gravity the weight of the step and its attachments being sufficient to effect this movement, although if it is desired the spring may be dispensed with and an arm used instead, connecting the arm 30, by a pivotal link arrangement to the portion 35.

While I have illustrated and described the preferred form of structure I do not wish to limit myself to the precise details of structure set forth but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In combination with a vehicle having a plurality of steps, U-shaped supporting members slideably mounted on opposite sides thereof, for upward and downward movement relatively thereto; an auxiliary step carried by said supporting members; a rocker arm; means for attaching said rocker arm to said auxiliary step; a crank for operating said rocker arm for effecting upward and downward movement of said auxiliary step; and spring operated means mounted on said crank for locking said auxiliary step in either extremity of its movement.

2. In combination with a vehicle having a plurality of steps, U-shaped supporting members slideably mounted on opposite sides thereof, the legs of said supporting members having elongated slots formed therein; an auxiliary step mounted on the right of said supporting members; a rocker arm; means for rocking said rocker arm; and means for connecting said auxiliary step to said rocker arm to permit the move-

ment of said step to form an extension of said vehicle steps.

3. In combination with a vehicle having a plurality of steps, an auxiliary step adapted for positioning beneath the lower one of said steps; supporting members for said auxiliary step adapted for slideable movement upwardly and downwardly relatively to said vehicle steps; a rocker shaft; a crank associated with said shaft for effecting a rocking of the same; and means associated with said vehicle steps for engaging said crank at opposite extremes of movement for locking the same against further movement; a rocker arm fixedly mounted on said rocker shaft intermediate its ends; and a spring for attaching said rocker arm to said auxiliary step for maintaining the same upon movement of said rocker arm to one position in close engagement with the under surface of the lower of said steps and for assisting a movement of said rocker arm from one position to another upon the release of said crank from said locking means.

4. In combination with a vehicle having a plurality of steps and side walls supporting said steps, an auxiliary step adapted for positioning beneath the lower of said steps; slideable supporting members mounted on said auxiliary step and adapted for slideable movement along the side walls associated with said steps; a rocker shaft positioned beneath said vehicle steps; a crank mounted on said rocker arm and adapted for rocking the same; locking means mounted on said side walls and adapted for engaging said crank at opposite extremes of movement of the same for locking the same against movement; a rocker arm fixedly mounted on said shaft intermediate its ends beneath said vehicle steps; and a spring having one end thereof connected to the free end of said rocker arm and having the opposite end thereof attached to said auxiliary step for effecting a raising of said auxiliary step into close engagement with the under surface of said vehicle step upon the movement of said rocker arm to one position, said spring being adapted for assisting the movement of said rocker arm to another position upon the release of said crank by said locking means.

In testimony whereof I have signed the foregoing.

MARY PERKINS.