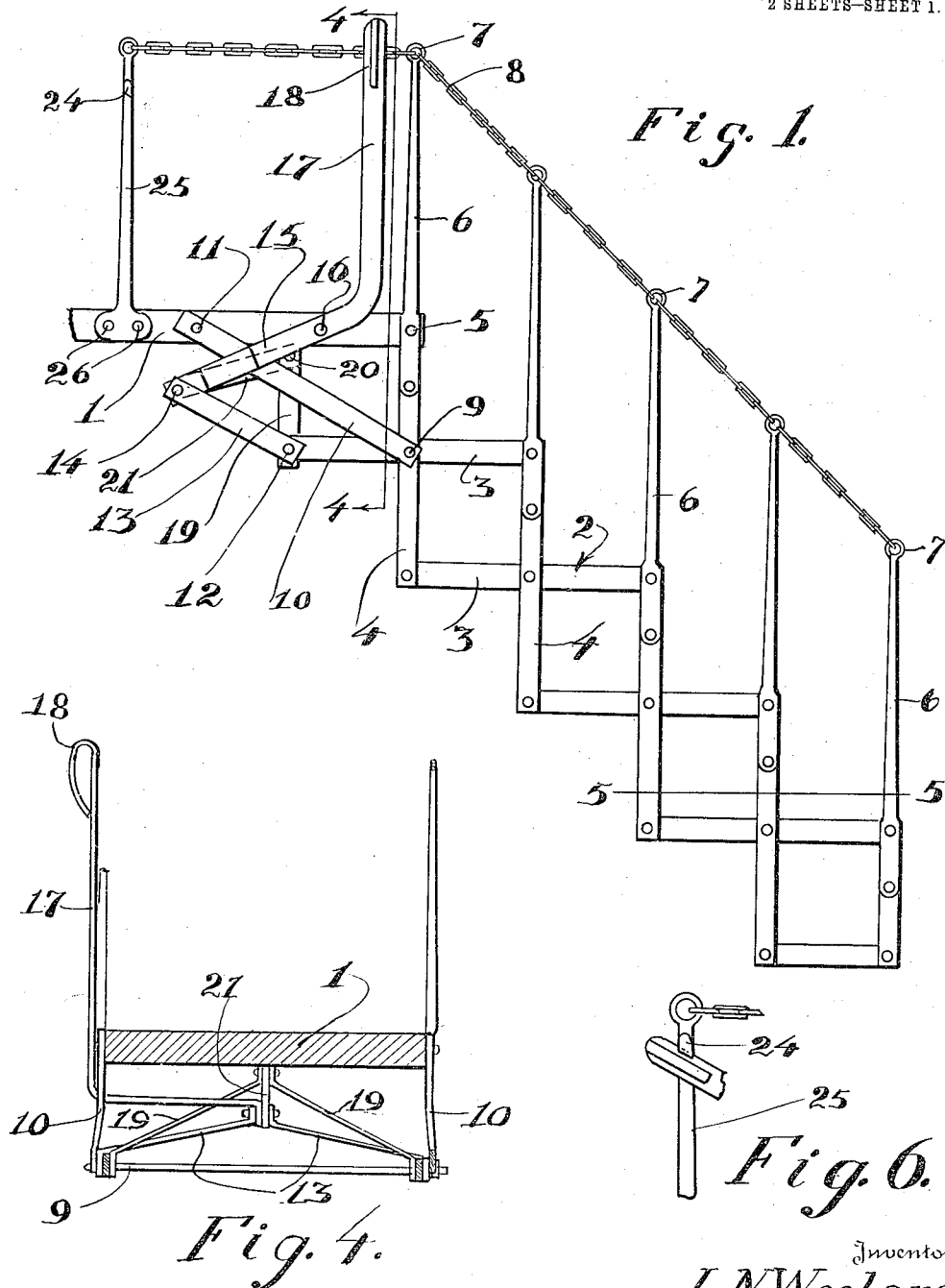


L. N. WOOLARD.
FOLDING STEPS.
APPLICATION FILED OCT. 5, 1914.

1,128,212.

Patented Feb. 9, 1915.

2 SHEETS—SHEET 1.



Witnesses
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Attorney

1,128,212.

2 SHEETS—SHEET 2.

Fig. 3.

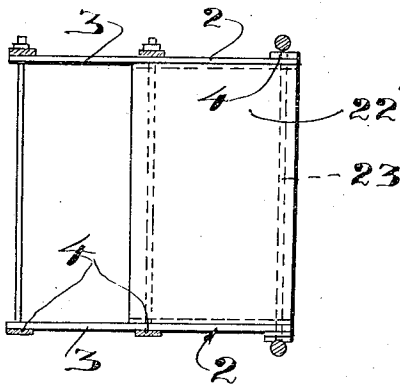
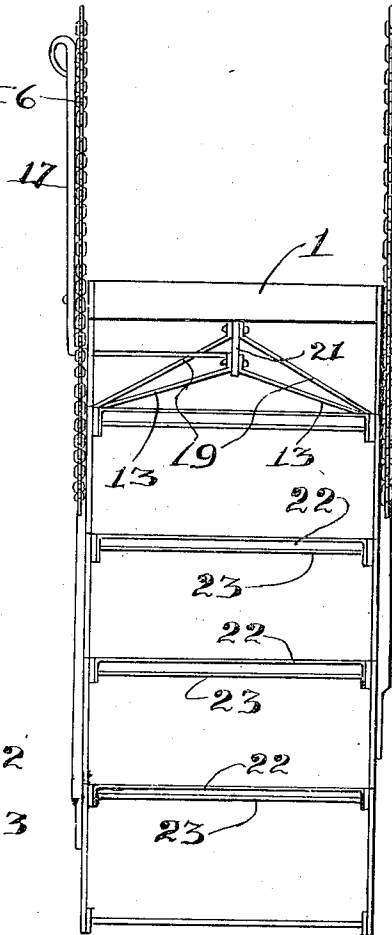


Fig. 5.

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FOLDING STEPS.

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To all whom it may concern:

Be it known that I, LINYEAR N. WOOLARD, a citizen of the United States, residing at Washington, in the county of Beaufort and State of North Carolina, have invented certain new and useful Improvements in Folding 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 new and useful improvements in folding steps and has for its principal object to provide a set of steps which is particularly adapted for use on railroad cars and the like.

Another object is to provide a device which may be secured to a wagon or other suitable structure in such a way that the same may be used as a fire escape.

A still further object of the invention is to provide a novel arrangement of levers and links for controlling the operation of the device.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a side view in elevation of a set of steps constructed in accordance with this invention illustrating the same as it would appear in a lowered position, Fig. 2 is a view similar to Fig. 1 illustrating the steps in raised position, Fig. 3 is a front view in elevation of the steps as they would appear when lowered, Fig. 4 is a detail sectional view taken on line 4—4 of Fig. 1, Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 1, and Fig. 6 is an enlarged detail view of one of the uprights showing the latch member for holding the lever in its operated position.

Referring now to the drawings by characters of reference, the numeral 1 designates the platform of the car or other device on which the steps are used to which the upper links of the lazy tongs forming the step support which will be more fully hereinafter described are pivotally secured. These lazy tongs are designated by the numeral 2 and comprise the coöperating links 3 and 4 which are respectively horizontal and vertical when the device is in its unfolded position. The upper links 4 of the device are pivoted as at 5 to the platform and each

link is provided with an upward extension 6 which terminates in its upper extremity in the eyelet 7 to which the chain 8 forming the rail of the device extends.

Pivotally secured as at 9 to the central pivot between the uppermost vertical bar 4 and horizontal bar 3 are the brace rods 10 which extend upwardly and rearwardly and are secured as at 11 to the platform. To the end of uppermost brace link 3 is pivotally secured as at 12, the link 13, which link is connected at 14 to the lever 15 which is pivotally secured as at 16 to the platform. The end of the lever opposite the pivoted end 14 extends upwardly as at 17 and provided with the handle portion 18 as clearly illustrated in the drawing.

Secured between the free ends of the uppermost horizontal link 3 are the upwardly and inwardly inclined links 19, the opposite ends of which are pivoted as at 20 to the link 21, the opposite end of which is pivoted between the ends of the links 13 at the point where they are connected to the lever 15.

Secured intermediate the central pivot point and the outer end of each of the horizontal links 3 are the platforms 22 which are supported on the pivot rod 23 and these platforms are arranged to form the treads of the steps. A suitable latch member 24 is secured to the upright 25 which is secured as at 26 to the platform 1 and this latch member is arranged to engage the lever and hold the same in a position illustrated in Fig. 2 when the steps are not in use.

It will be found that in the foregoing that in use when it is desired to lower the steps, the handle portion 17 of the lever 15 is released from its position beneath the latch member 24 and the lever permitted to swing on its pivot 16 in its position illustrated in Fig. 1. This will permit the lazy tongs 2 to assume the position illustrated in Fig. 1 and thereby to place the plate or tread 22 in position to permit the user to easily climb the steps. Upon the desire of the user to raise the steps, the lever is swung on its pivot 16 in the position illustrated in Fig. 2 which will cause the lazy tongs through the action of the levers and links 13 and 21 to assume the position shown in Fig. 2 and thereby draw the steps to their inoperative position. The handle portion 17 is then pushed beneath the latch member 24 and it will be evident that the device will be locked in its raised position and any danger of the

steps falling or being folded downwardly into their operative position is eliminated.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the appended claims.

10 What is claimed is:—

1. A device of the class described including a pair of lazy tongs, bolts holding the lazy tongs in spaced parallel relation, treads connected between the lazy tongs and supported by the bolts, uprights carried by the vertical links of the lazy tongs, eyelets at the upper ends of the upright, chains extending through the eyelets and forming hand rails and a lever and link mechanism
15 for raising the steps to inoperative position and lowering the same into operative position at the will of the user.

2. A device of the character described in-

cluding a pair of lazy tongs, said lazy tongs being in spaced parallel relation, bolts securing the lazy tongs in operative position, treads supported by the bolts and on the horizontal arms of the lazy tongs, uprights secured to the vertical arms of the lazy tongs, chains carried by the upper ends of the uprights to form hand rails, links pivotally connected to the upper ends of the uppermost horizontal arms of the lazy tongs, a lever pivotally connected to the arms of the ends of the link, and means connected to the lazy tongs and to the lever to prevent the link from forming a dead center at the point where they are connected to the lazy tongs.

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

LINYEAR N. WOOLARD.

Witnesses:

S. B. ETHERIDGE,
THOS. G. BLOW.

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