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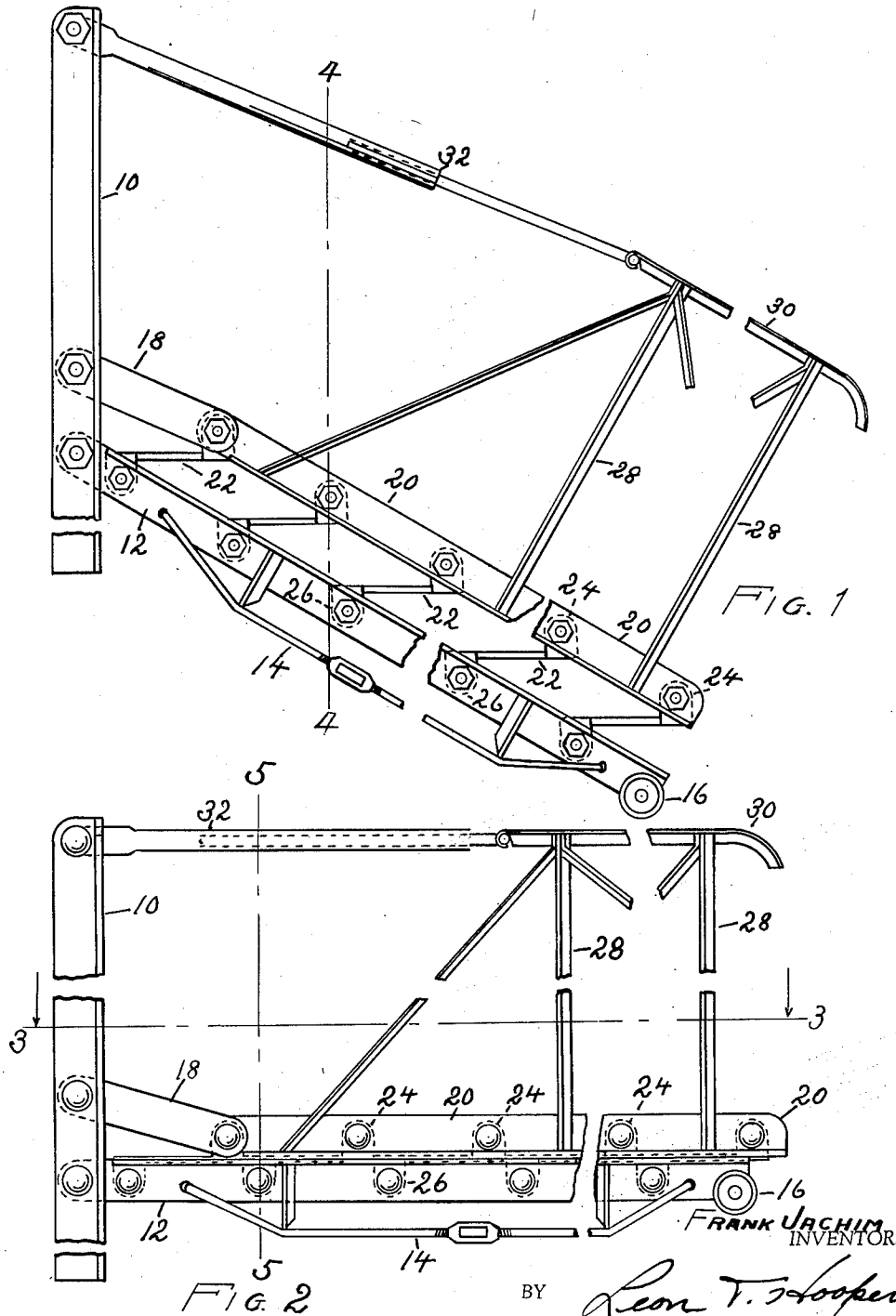
F. JACHIM

2,220,155

FOLDING STAIRWAY

Filed Aug. 8, 1938

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

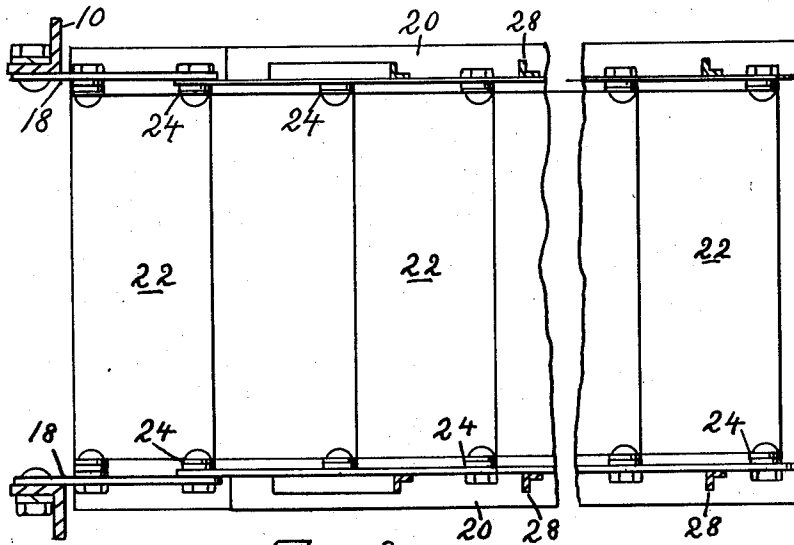


FIG. 3

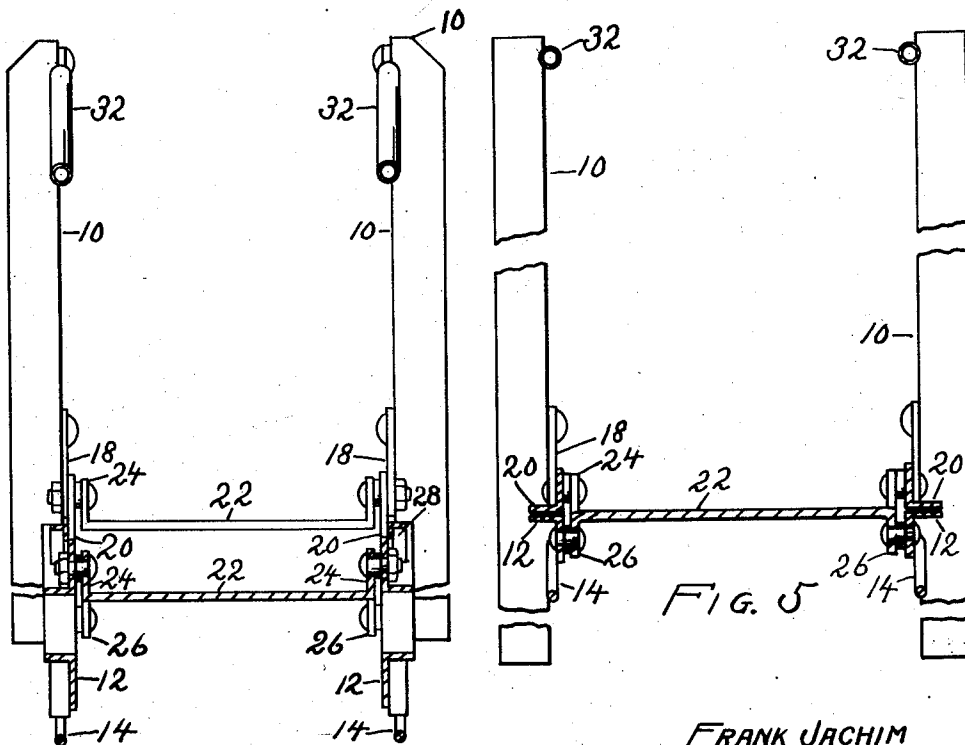


FIG. 4

FIG. 5

FRANK JACHIM
INVENTOR.

BY

Lem T. Hopper

ATTORNEY.

UNITED STATES PATENT OFFICE

2,220,155

FOLDING STAIRWAY

Frank Jachim, Hammond, Ind.

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4 Claims. (Cl. 228-48)

This invention relates to an improved folding stairway which is exceptionally rugged and sturdy although exceeding light in weight. The improved folding stairway of this invention is especially adapted for employment in conjunction with a tank having a floating roof.

One of the principal objects of advantage and importance of the improved folding stairway of this invention resides in the provision of means whereby one end of the device may be raised or lowered at will.

Another and still further important object of advantage resides in the provision of means for maintaining the treads horizontal regardless of the angle at which the stairway is positioned.

Still another and further object of advantage resides in the provision of means for maintaining a hand rail between the anchor post and the end of the stairway.

An additional object of importance of the improved folding stairway of this invention resides in the provision of means for forming a runway when the stairway is in a horizontal position.

Additional objects of advantage and importance will become apparent as the following detailed description progresses, reference being had to the accompanying drawings, wherein

Fig. 1 is a side elevational view of a folding stairway which embodies the invention.

Fig. 2 is a side elevational view of the stairway elevated to a horizontal position.

Fig. 3 is a horizontal section taken on line 3-3 of Fig. 2, looking in the direction indicated by the arrows.

Fig. 4 is a vertical section taken on line 4-4 of Fig. 2.

Fig. 5 is a vertical section taken on line 5-5 of Fig. 1.

As shown in the drawings:

The reference numeral 10 indicates generally the anchor posts which in the preferred embodiment of the invention are constructed of angle iron. However, it will be apparent that any other suitable anchorage may be employed.

Hingedly secured to each anchor post 10 is a supporting member 12 which is preferably constructed of angle iron. A tierod 14 may be secured to the supporting member 12. Where the tierod 14 is used the supporting member 12 may be constructed of light weight material without danger of its sagging or becoming otherwise distorted.

Positioned closely adjacent the free end of each supporting member 12 is a wheel 16. The wheel 16 provides a means for allowing the end of the

stairway to move over a surface as the structure is raised or lowered.

Hingedly secured to each anchor post 10 is a tread leveling member 19. The tread leveling members 18 are secured at one end to the anchorage and extend substantially parallel to the supporting member 12.

Hingedly secured to the outwardly projecting end of each tread leveling member 18 is a tread supporting member 20. The tread supporting members 20 are preferably constructed of angle iron as is clearly shown in the drawings. It will be apparent however that any suitable material may be employed for a tread supporting member. The tread supporting members 20 and the supporting members 12 form front and rear tread supporting units, respectively. Tread supporting members are positioned on each side of the improved stairway of this invention. Each tread supporting member 20 is positioned above a supporting member 12 and is at all times parallel thereto.

Positioned between each pair of parallel supporting members 12 and 20 is a plurality of treads 22. Each tread is preferably constructed of sheet metal and has at each end thereof an upwardly and a downwardly turned lug 24 and 26, respectively. Each of the lugs 24 and 26 are apertured to receive a bolt.

In the preferred embodiment of the invention the upwardly projecting lug 24 is adapted to be secured to the tread supporting member 20 and thus support the forward portion of the tread. The downwardly projecting lug 26 is adapted to be secured to the supporting member 12 and thus support the rear portion of the tread.

Projecting upwardly from tread supporting member 20 is a plurality of standards 28 which are adapted to support a hand rail 30. The portion of the hand rail which is secured to the anchor post 10 is preferably constructed of tubing 32. A portion of the hand rail is adapted to be telescoped within the tubing 32. This construction provides a hand rail extending from the anchor post to the end of the stairway regardless of the angle at which the stairway may be positioned.

It will be apparent from the foregoing that herein is provided a rugged and sturdy device which may be economically produced.

Moreover, because of the telescoped hand rail and the tread leveling member, which at all times maintains the treads horizontal, a device having a high safety factor is produced.

It will be apparent from the foregoing that 55

the improved folding stairway of this invention may be used as a fire escape or for practically any purpose for which a folding stairway is adapted.

Moreover, when the stairway is raised to the horizontal position each tread comes into edge to edge abutment with the next tread thus forming a practically smooth runway.

It will be apparent to those skilled in the art to which the invention appertains that numerous changes and alterations may be made without departing from the spirit or scope of the invention. Accordingly, it is understood that the patent granted hereon is to be limited only as is necessitated by the prior art and the terminology of the claims when given the range of equivalents to which they may be entitled.

I claim as my invention:

1. In a folding stairway, a pair of vertical anchor posts in spaced parallel relation, a tread leveling link member pivotally secured to each anchor post, an upper tread supporting member pivotally secured to the outer end of each link, a lower tread supporting member pivotally secured beneath said links to each anchor post, and a plurality of tread members pivotally secured near the front edge thereof to said upper tread supporting members, said tread members being near their rear edge pivotally secured to said lower tread supporting members.

2. In a stairway, a pair of anchor members in spaced relation one to the other, a lower tread supporting member pivotally secured to each of said anchor members, a plurality of treads pivotally secured adjacent the rear edge thereof to said tread supporting members, a pair of upper tread supporting members, said treads being pivotally secured adjacent the front edges thereof

to said upper tread supporting members, and a movable pivot to which the secured end of the upper tread supporting members is journaled, said movable pivot comprising a leveling link extending from the journaled end of each upper tread supporting member and having the other end thereof pivotally secured to an anchor member.

3. In a stairway, an anchor member, a pair of lower tread supporting members hingedly joined to said anchor member, said anchor member providing a fixed pivot upon which the tread supporting members may move, a pair of upper tread supporting members, one end of said tread supporting members being joined to a movable pivot, said movable pivot comprising a pair of tread leveling link members pivotally secured to said anchor member and said tread supporting members, said tread leveling link members being adapted to move into engagement with the lower tread supporting members when the stairway is raised to a horizontal position, and a plurality of treads pivotally secured to said upper and said lower tread supporting members.

4. In a stairway, an anchor, a pair of tread supporting members pivotally secured to said anchor, a plurality of treads pivotally secured adjacent the rear edges thereof to said tread supporting members, a pair of upper tread supporting members pivotally secured to said treads closely adjacent the forward edge thereof, the upper end of each upper tread supporting member being journaled to a movable pivot, said movable pivot comprising a tread leveling link pivotally secured to said anchor, said link providing an angularly disposed brace barring the upward movement of the stairway from a horizontal position.

FRANK JACHIM.