C. D. SEEBERGER.

CONVEYER.

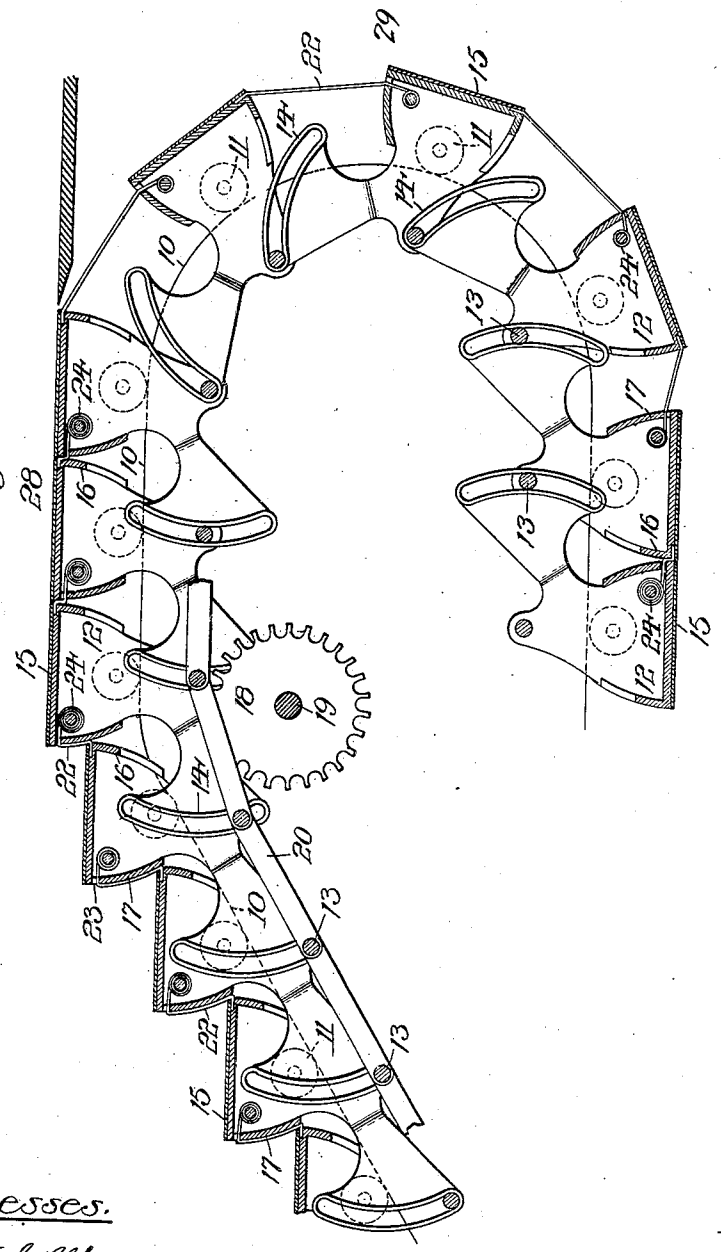
APPLICATION FILED JAN. 5, 1903. RENEWED FEB. 17, 1908.

898,794.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

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2 SHEETS—SHEET 2.

Fig. 2.

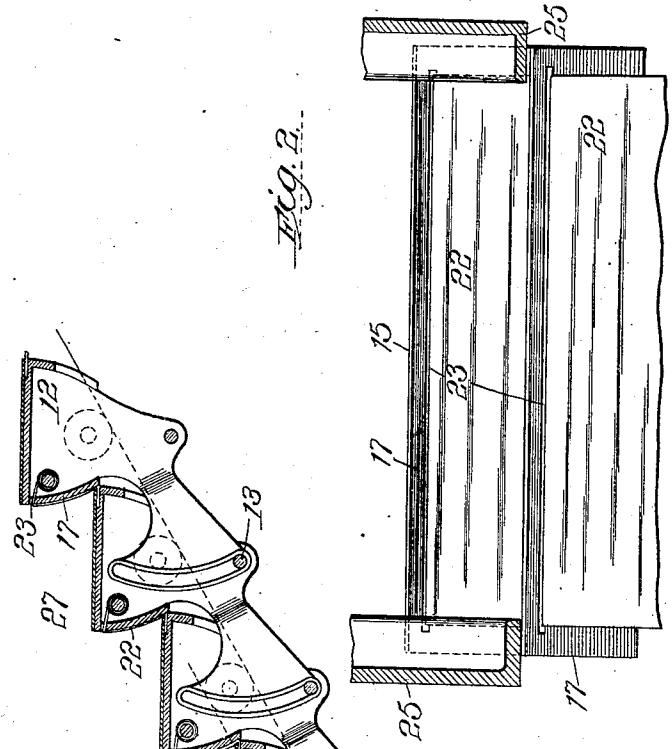

Fig. 1.

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UNITED STATES PATENT OFFICE.

CHARLES D. SEEBERGER, OF YONKERS, NEW YORK.

CONVEYER.

No. 898,794. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed January 5, 1903, Serial No. 137,817. Renewed February 17, 1908. Serial No. 416,385.

To all whom it may concern:

Be it known that I, CHARLES D. SEEBERGER, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

My invention is concerned with certain improvements in that class of conveyers known as traveling stairways in which a series of moving steps pass over a series of tracks having inclined and horizontal portions forming ascending stairways and horizontal landings therefor, and is designed to overcome a difficulty that has been met with in this class of devices as hitherto constructed.

In the ordinary construction heretofore employed, the risers of the steps are exposed upon inclined ascending portions so that the fabrics of skirts, etc., may come in contact therewith and possibly adhere slightly thereto so that when the steps pass from the inclined to the horizontal they may be caught between the riser and the advancing nosing of the adjacent step as it rises to a horizontal position, thereby causing the fabric to be torn or the skirt detached.

My invention is designed to remedy this difficulty by providing a riser connected to the rear step and moving therewith as it rises, so that a fabric that may have adhered thereto will be raised up and cannot possibly be caught between the two steps.

To illustrate my invention I annex hereto two sheets of drawings in which the same reference characters are used to designate identical parts in all the figures, of which—

Figure 1 is a central longitudinal section, somewhat diagrammatic in its nature, showing my invention applied to that portion of a moving stairway in which an ascending line of steps is brought to a horizontal landing and then returns; Fig. 1ª is a similar view showing a portion of the same system as the steps are brought around the curve constituting the lower end; and Fig. 2 is a detail elevation, on a slightly enlarged scale and in section on the line A—A of Fig. 1ª.

While my present invention might be employed in connection with any of the customary designs or types of traveling stairways I have for convenience shown it as employed in connection with the two wheel type shown in my application No. 232,270, (Case No. 17), and I make no claim in the present application to anything shown and described in said co-pending application, but expressly reserve all matters therein disclosed for claims therein.

Referring to the drawings the line 10 serves to indicate the position of the tracks upon which the wheels 11 (shown in dotted lines only) roll in the customary manner, a pair of wheels being journaled upon the brackets or castings 12 constituting the ends of the steps which are connected together by the step rods or bars 13 extending between the ends of the steps and passing through the curved slots 14 formed in the castings 12 constituting the ends of the adjacent steps. These steps are furnished with treads 15 and may have the rigid advancing front and rear risers 16 and 17 respectively. Power is applied to drive the apparatus by means of the gear 18 secured upon the driving shaft 19 and meshing with the rack links 20 connecting the step bars 13.

In addition to the above described mechanism constituting an invention of and claimed in my aforesaid application No. 232,270, I secure to the front nose of each step preferably by means of the recesses 21 formed in the front nose of the step a flexible riser 22, which consists of some suitable flexible material such as rubber cloth, leather, canvas, etc., of substantially the width of the step, as seen in Fig. 2, which passes through the elongated aperture 23 formed in the top of the rear riser 17 of the adjacent step as close to the rear nose thereof as possible, and is rolled upon a spring roller 24, which extends across the interior of the step and is journaled in suitable bearings formed in the nose 17. As the spring rollers 24 are of the customary curtain roller construction, or something similar, I have not illustrated the details thereof but it is sufficient to say that they tend to keep the flexible riser wound tightly thereon as nearly as is permitted by the position of the steps. These flexible risers arranged as specified provide automatically adjustable guards between adjacent steps for the purpose hereinafter described. While the flexible risers as shown are not quite the width of the complete step they are preferably long enough to extend beneath the balustrades 25 so that the entire exposed surface of the rear risers 17 are covered thereby as seen in Fig. 2. I also contemplate making the flexible risers the same width as the steps, changing the supports for the rigid riser (if one is em-

ployed) and for the rollers so as to permit this variation.

The operation of the foregoing apparatus will be readily apparent. In passing around the curved ends, such as shown in Fig. 1ª, the entire flexible riser is unrolled from the roller, but as it comes to the short horizontal landing 26, the flexible riser is entirely rolled up, and is again unrolled as the steps pass from the horizontal to the inclined portion 27, the flexible riser in this case conforming to the outer surface of the rear rigid risers 17 which I preferably employ but which might be omitted. Where the inclined portion 27 passes to the horizontal landing 28, which is one point where the danger is to be avoided, the flexible risers are rolled up upon the rollers and move with the rear step as it rises relative to the one in advance of it so that there is no possibilty of any dress, skirt or similar article adhering to or being caught between the two steps as they come to the horizontal position. When the steps pass from the horizontal landing portion 28 around the end 29, the flexible risers are again unrolled as at the other end.

While I have shown and described my invention as embodied in the form which I at present consider best adapted to carry out its purposes, it will be understood that it is capable of some modifications, and that I do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is—

1. In a device of the class described, the combination with tracks, of independent steps thereon, and the flexible risers connecting said steps.

2. In a device of the class described, the combination with the tracks, of steps thereon, and the extensible risers connecting said steps.

3. In a device of the class described, the combination with tracks, of steps thereon, and an extensible flexible riser connected to the front nose of the following step and to the rear nose of the preceding step.

4. In a device of the class described, the combination with the tracks, with steps thereon, an extensible flexible riser connected to the front nose of a following step and passing into the rear nose of the preceding step, and means for extending and retracting the riser as may be necessary at different points on the tracks.

5. In a device of the class described, the combination with the tracks, with steps thereon, an extensible flexible riser connected to the front nose of a following step and passing into the rear nose of the preceding step, and means for extending and retracting the riser as may be necessary at different points on the tracks, consisting of a spring roller mounted in the preceding step and upon which the riser is wound when it is retracted.

6. In a device of the class described, the combination with the tracks, of the independent steps thereon, and the flexible risers secured to the steps behind those with which they coöperate.

7. In a device of the class described, the combination of the tracks, of the steps thereon, and the extensible risers secured to the steps behind those with which they coöperate.

8. In a device of the class described, the combination with the tracks having the inclined portions and the horizontal landing portions, of steps thereon, whose tread surfaces alone form the landings, and the risers connecting said steps.

9. In a device of the class described, the combination with the tracks having the inclined portion and the horizontal landing portions, of the steps thereon, the risers connecting said steps, and means for withdrawing the risers into the steps on the landing portions of the tracks.

10. In a device of the class described, the combination with tracks having angularly disposed portions, steps moving on the tracks, and automatically adjustable guards connecting adjacent steps.

11. In a device of the class described, a way having inclined and horizontal portions, a series of connected steps traveling thereon, and a series of flexible risers connecting adjacent steps.

12. In a device of the class described, a way having inclined and horizontal portions, a series of connected steps traveling thereon, and a series of flexible risers secured to the steps behind those with which they coöperate.

13. In a device of the class described, a way having inclined and horizontal portions, a series of connected steps traveling thereon, and a series of flexible and extensible risers connecting the steps.

14. In a device of the class described, a way having inclined and horizontal portions, a series of connected steps traveling thereon, and a series of flexible and extensible risers connecting the fronts of succeeding steps to the rear of preceding steps.

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

CHARLES D. SEEBERGER.

Witnesses:
E. W. MARSHALL,
W. H. BRADY.