

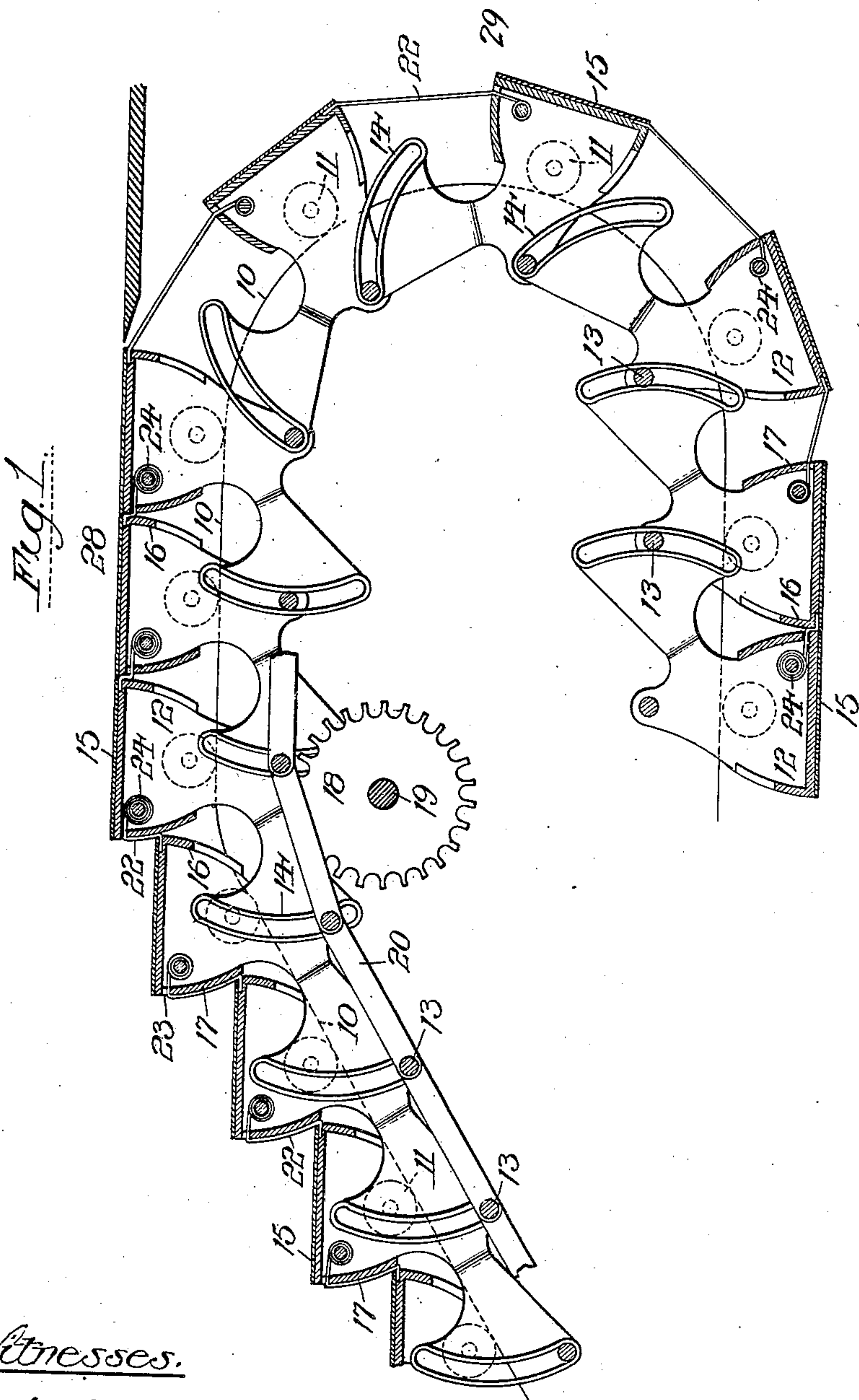
C. D. SEEBERGER.  
CONVEYER.

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

898,794.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.



Witnesses.

*Lute S. Alter*

*E. Molitor*

Inventor:

*Charles D. Seeberger*

*By Colum, McRobert & McElroy*  
Attorneys.

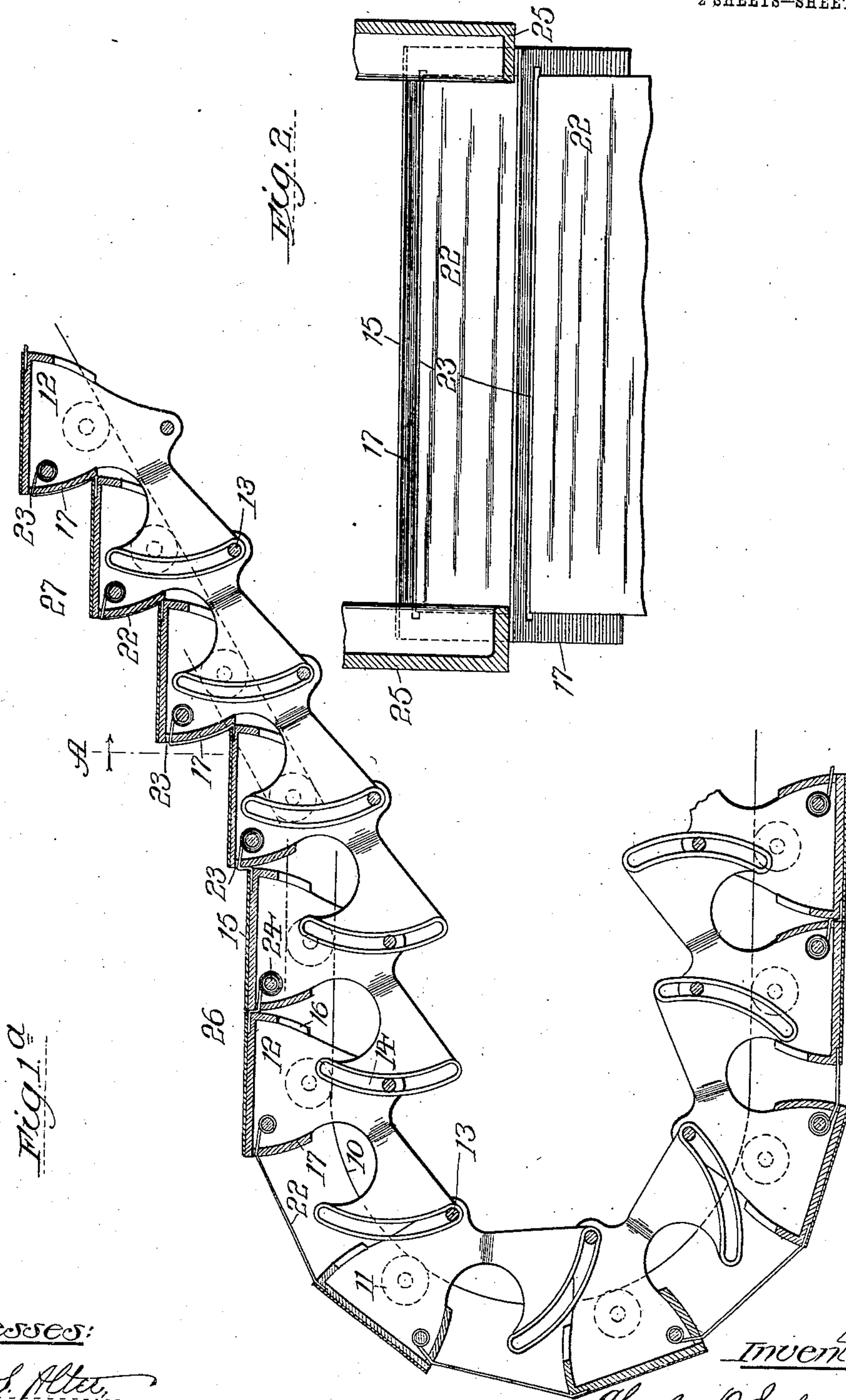
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*E. Malter*

Inventor:  
*Charles D. Seeberger,*  
*By Coburn, McRobert & McElroy*  
Attorneys.



# 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. SEE-  
BERGER, a citizen of the United States, resid-  
ing at Yonkers, in the county of Westchester  
5 and State of New York, have invented cer-  
tain new and useful Improvements in Con-  
veyers, of which the following is a specifica-  
tion.

My invention is concerned with certain  
10 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 por-  
tions forming ascending stairways and hori-  
15 zontal landings therefor, and is designed to  
overcome a difficulty that has been met with  
in this class of devices as hitherto con-  
structed.

In the ordinary construction heretofore  
20 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 there-  
to so that when the steps pass from the in-  
25 clined 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.

30 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  
35 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—

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

While my present invention might be em-  
ployed in connection with any of the custom-  
ary designs or types of traveling stairways  
I have for convenience shown it as employed  
55 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 applica-  
tion to anything shown and described in said  
co-pending application, but expressly reserve  
all matters therein disclosed for claims therein. 60

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 65  
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 70  
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 75  
secured upon the driving shaft 19 and mesh-  
ing with the rack links 20 connecting the  
step bars 13.

In addition to the above described mechan-  
ism constituting an invention of and claimed 80  
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 ma- 85  
terial such as rubber cloth, leather, canvas,  
etc., of substantially the width of the step, as  
seen in Fig. 2, which passes through the elon-  
gated aperture 23 formed in the top of the  
rear riser 17 of the adjacent step as close to 90  
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 95  
curtain roller construction, or something simi-  
lar, 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 100  
the steps. These flexible risers arranged as  
specified provide automatically adjustable  
guards between adjacent steps for the pur-  
pose hereinafter described. While the flexi-  
ble risers as shown are not quite the width of 105  
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 110  
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. 1<sup>a</sup>, 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 possibility 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 cooperate.

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 cooperate.

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 cooperate.

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.