Feb. 23, 1926.

1,574,503

H. F. MAYNES

AMUSEMENT CONVEYER BELT

Filed June 23, 1925

2 Sheets-Sheet 1

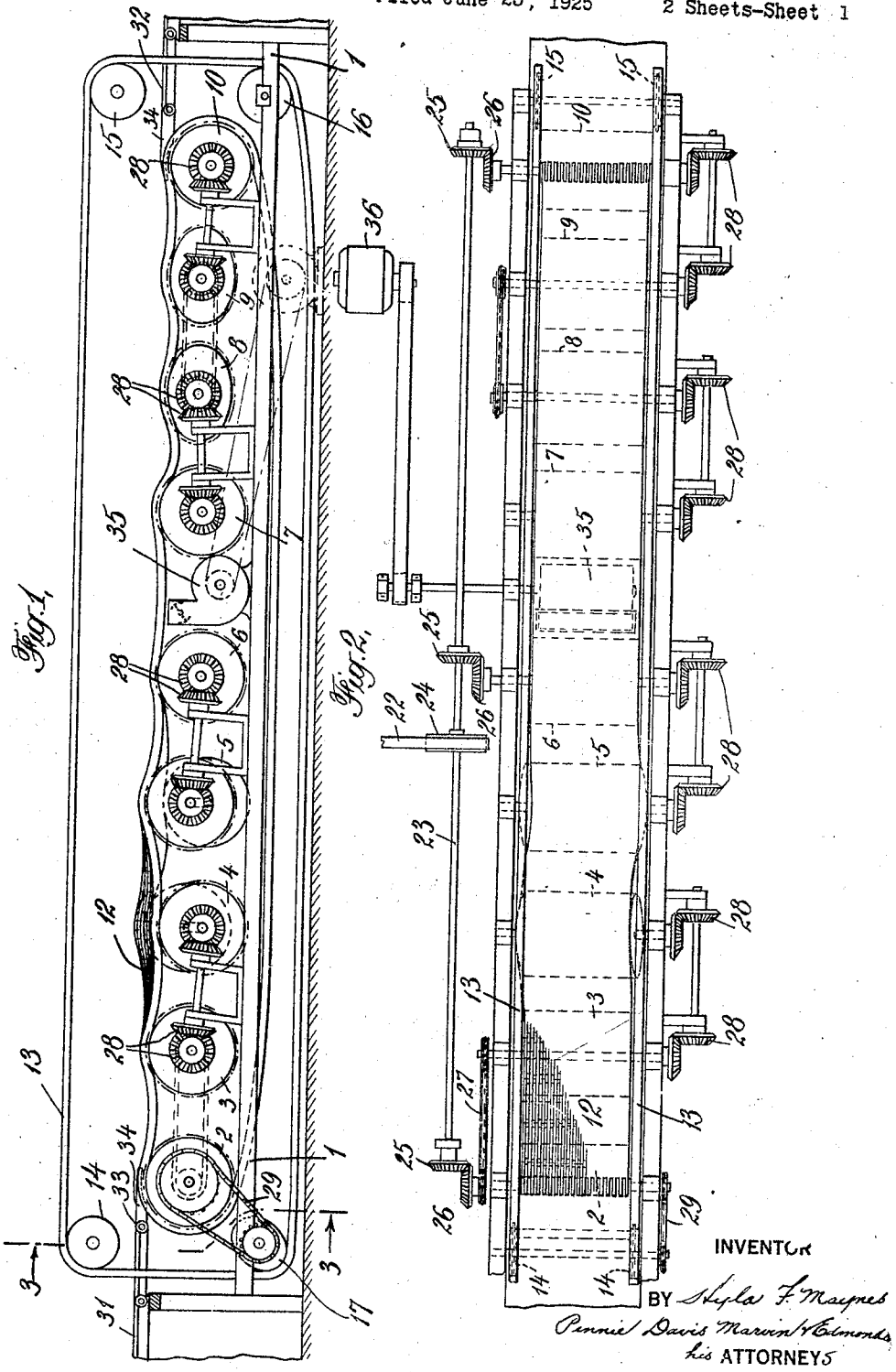

Fig. 1.

Fig. 2.

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Fig. 3,

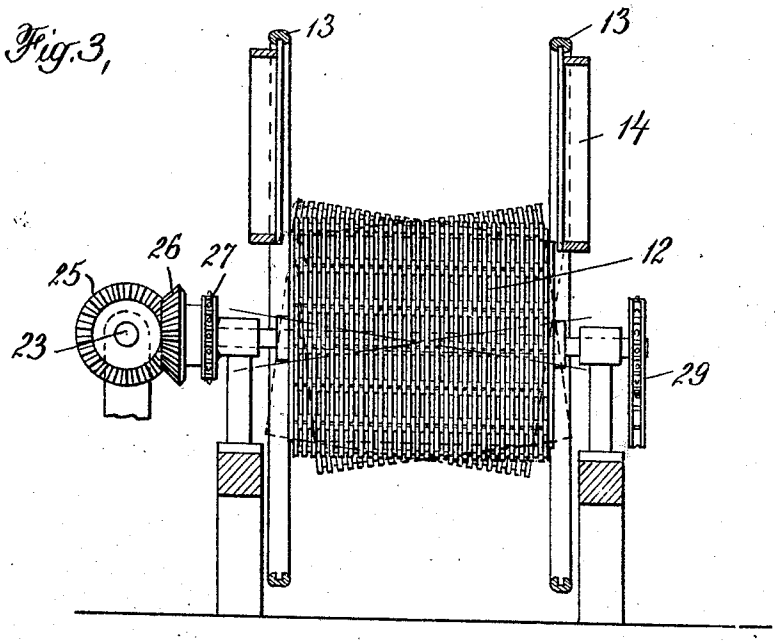


Fig. 4,

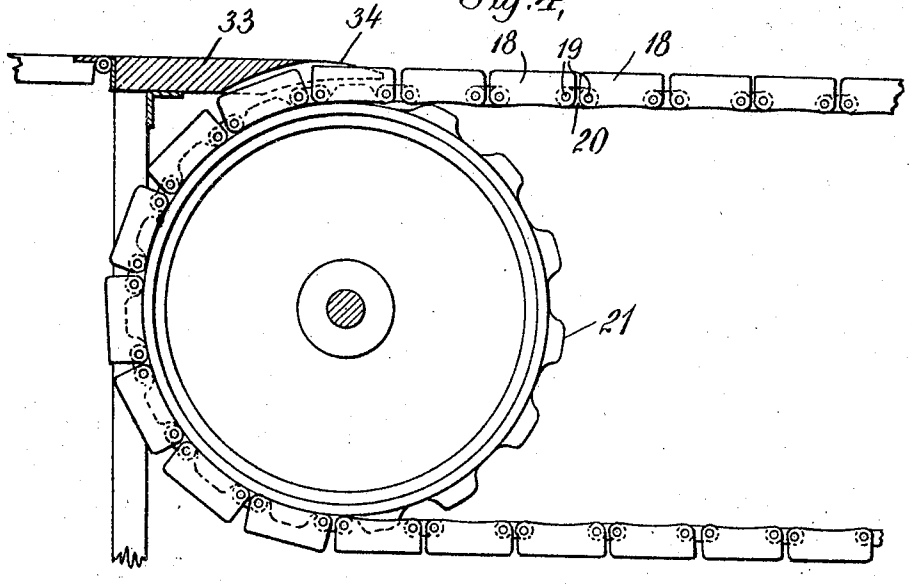
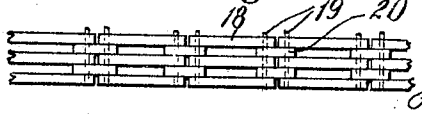


Fig. 5.



INVENTOR

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Patented Feb. 23, 1926. 1,574,503

UNITED STATES PATENT OFFICE.

HYLA F. MAYNES, OF NORTH TONAWANDA, NEW YORK, ASSIGNOR TO MAYNES CORPORATION, OF DOVER, DELAWARE, A CORPORATION OF DELAWARE.

AMUSEMENT CONVEYER BELT.

Application filed June 23, 1925. Serial No. 38,993.

To all whom it may concern:

Be it known that I, HYLA F. MAYNES, a citizen of the United States, residing at North Tonawanda, in the county of Niagara, State of New York, have invented certain new and useful Improvements in Amusement Conveyer Belts; 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 amusement apparatus, and particularly to an amusement apparatus in the form of a conveyer belt designed to carry passengers and subject them, during their passage, to movements unexpected. Broadly, the apparatus of the present invention comprises a series of drums over which a passenger-carrying conveyer belt is moved, the axes of the drums being set at different angles, and the shapes of some of them being irregular. By virtue of these shapes and positions the passengers are subjected to an undulating, rocking, and bumping motion as the belt moves forward. As the passengers are intended to stand upon this belt, I also provide an adjacent movable hand rail or pair of hand rails in the form of straps. These hand rail straps are driven with the main conveyer belt, and like the former also move over irregular shaped pulleys so that they move forward in an irregular manner. Thus, the combination of an undulating and rocking floor and an unsteady hand support is, to say the least, disconcerting. The belt which I preferably use is an endless belt of the chain type and is made up of a series of spaced links. The drums are provided with sprocket teeth which cooperate with the chain belt to drive it. The belt being slotted also enables me to add another feature of interest, namely, a blower which I situate beneath the upper run of the belt and blow a blast of air upwardly through the slots between the links, either continuously or at odd intervals, which sudden blasts further add to the amusement as well as the discomfiture of the passengers. In accordance with the present invention I have also devised a safety tread which permits passengers readily to step on and off the moving belt. This tread comprises a casting having a series of forwardly extending fingers which lie within the spaces or grooves between the links of the chain.

In the accompanying drawings I have illustrated a preferred embodiment of my invention which I shall now describe in detail. In these drawings, Figure 1 is a side elevation of a conveyer belt and hand rail constructed in accordance with the present invention; Figure 2 is a plan view thereof; Figure 3 is a transverse vertical section on an enlarged scale taken along line 3—3 of Figure 1; Figure 4 is an enlarged detail of one of the end drums and the chain, showing one of the safety treads in position, and Figure 5 is a detail plan of a section of the belt.

In these drawings 1 represents the frame which supports the apparatus. Upon this frame are mounted the journals of a series of sprocket drums 2—10 over which passes a passenger-carrying chain belt 12. On either side of this belt is mounted an endless movable strap 13 the upper run of which is situated a suitable distance above the upper run of the belt 12 and acts as a hand rail for the passengers standing upon the main belt. This endless hand rail passes over a series of pulleys 14—17.

The upper run of the conveyer belt is not stretched taut across the supporting drums, but is loose enough to form a succession of hills and dales; thus, the passengers in proceeding along the belt are subjected to an undulating motion. It will also be noted that the axes of all of the sprocket drums, with the exception of drums 4 and 5, are horizontal. But the near end of drum 4, as viewed in Figure 1, tips downward from the horizontal, and the near end of drum 5 tips upward, the result being that in passing from drum 3 to drum 6, the passengers are subjected not only to an undulating, but to a rocking motion as well. All of the drums, with the exception of drums 8 and 9 are circular in cross-section. But these two drums are not circular; they are elliptical, so that the passenger in passing over them is gently raised and lowered as well as undulated by the mere contour of the belt passing over the drums.

Pulleys 14, 15 and 16 over which the hand rail passes are circular. Pulley 17, however, is not circular, but elliptical, and as this is the driving pulley for the rail, the result is that the rail moves forward irregularly and

at varying rates of speed. There is sufficient slack in the rail strap to permit this movement. This slack also causes the upper run of the strap to rise and fall with the revolution of the pulley 17.

The conveyer 12 is made up of a series of parallel spaced links 18 pivotally connected by means of pins 19 and spacer links 20, these latter being substantially one-half the depth of the links 18 as illustrated most clearly in Figure 4. As a result of this construction the upper face of the belt presents a series of parallel ridges formed by the links 18 with a series of interposed parallel spaces or grooves between them. The drums 2—10 are provided upon their peripheries with a series of sprocket teeth 21 which roll into the spaces between the spacer links 20 and in cooperation with the latter move the belt.

The manner in which the apparatus is driven will be clear from an inspection of Figures 1 and 2, but may be briefly described as follows: Power is received from any desired source through a belt 22 and a drive shaft 23 through the pulley 24. Upon this shaft 23 are three bevel pinions 25 which mesh with similar pinions 26 on the shafts of drums 2, 6 and 10 respectively. Drum 2, through a chain and sprocket connection 27 drives drum 3, which drum through a series of bevel pinions 28 drives drum 4. In a similar manner drum 5 is driven from drum 6 and drums 7, 8 and 9 from drum 10. The hand rails are also driven from drum 2 by means of a chain and sprocket connection 29 with pulley 17.

At the forward end of the apparatus is located a loading platform 31 and at the other end a discharge platform 32. Each of these platforms is provided with a safety tread 33 in the form of a casting having a series of projecting fingers 34 which extend within the spaces between the links 18, shown most clearly in Figure 4. By means of these treads the passengers are able to step on and off the belt with ease and without danger of tripping.

In order to add interest and excitement, I mount upon the frame 1, between drums 6 and 7, a blower 35 driven by means of a motor 36. This blower directs a blast of air upwardly through the slotted belt, either continuously or now and then, much to the entertainment as well as the consternation of the passengers passing thereover.

In operation the drums are set in rotation and carry the belt over them. The passengers enter from the platform 31, step upon the upper run of the belt 12 and grasp the hand rail 13. From this moment their troubles begin as they are led forward by a series of undulating, rocking, rising and falling movements to the platform 32. When the floor upon which they are standing goes through the various contortions for which it is designed, the passengers hold for their lives to the rail 13. But this alas proves to be a broken reed and is no more to be relied upon than the belt 12 itself. I prefer so to gear the various parts so that as the elliptical drums 8 and 9 raise the passengers the elliptical pulley 17 will permit the upper run of the hand rail to drop, and when the drums 8 and 9 are letting the passengers down, the hand rail 13 will be raised to tautness.

I claim:

1. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, means for imparting a forward and undulating motion to the belt, a movable hand rail adjacent the belt, and means for imparting an uneven motion thereto.

2. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, a plurality of drums for supporting and advancing the belt, the axes of certain of the drums being inclined relative to those of the others to impart an undulating and rocking motion to the belt.

3. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, a plurality of drums for supporting and advancing the belt, the axes of certain of the drums being horizontal, and the axes of one being inclined in one direction and that of another in another direction to impart an undulating and rocking motion to the belt.

4. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, a plurality of drums for supporting and advancing the belt, certain of the drums being circular in cross-section and certain others non-circular so that an irregular undulating motion is imparted to the belt.

5. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, a plurality of drums for supporting and advancing the belt, the axes of certain of the drums being inclined relative to those of the others and certain of the drums being circular in cross-section and certain others non-circular so that an irregular undulating and rocking motion is imparted to the belt.

6. An amusement apparatus comprising the combination of a slotted, passenger-carrying belt, means for imparting a forward and undulating motion to the belt and means for directing a blast of air upward through the belt.

7. An amusement apparatus comprising the combination of a passenger-carrying belt, a movable hand rail adjacent the belt, a non-circular pulley over which the hand rail passes and means for moving the belt and the hand rail.

8. An amusement apparatus comprising the combination of a passenger-carrying conveyer belt, a plurality of irregularly disposed and shaped drums for advancing the belt and imparting an uneven motion thereto, a movable hand rail adjacent the belt, a plurality of pulleys for supporting and advancing the hand rail, one of said pulleys being non-circular to impart an irregular motion to the hand rail.

9. An amusement apparatus comprising the combination of an endless passenger-carrying belt, provided with laterally spaced links forming continuous longitudinal grooves in the face of the belt, drums over which the belt passes, and a stationary tread situated above an end drum and provided with fingers extending between the links.

In testimony whereof I affix my signature.

HYLA F. MAYNES.