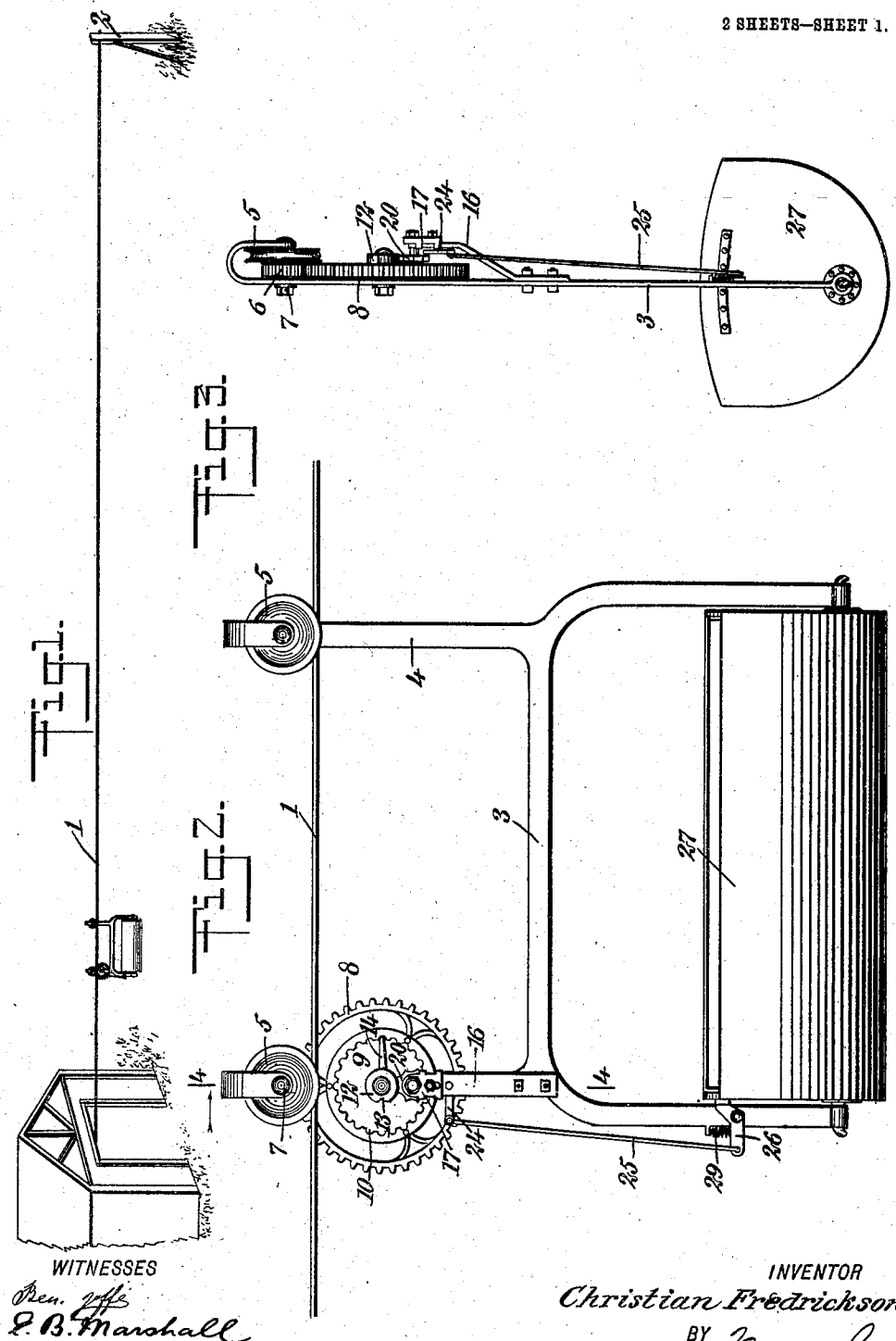
C. FREDRICKSON.

AUTOMATIC TRIP FOR CONVEYERS.

APPLICATION FILED JUNE 16, 1908.

901,163. **Patented Oct. 13, 1908.**

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

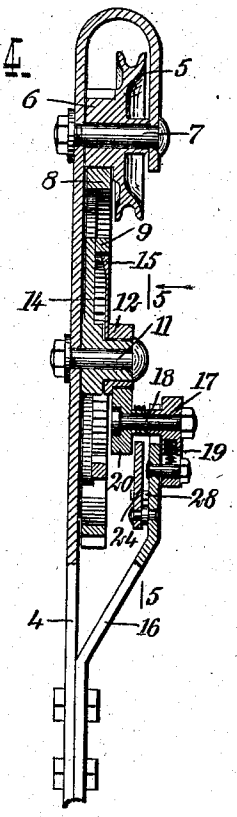
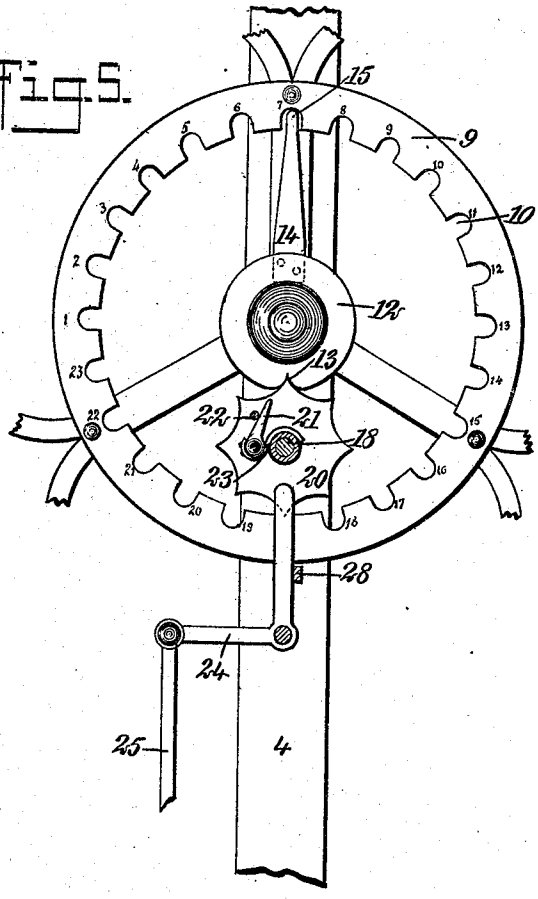


Fig. 5.



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AUTOMATIC TRIP FOR CONVEYERS.

No. 901,163. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed June 16, 1908. Serial No. 438,753.

To all whom it may concern:

Be it known that I, CHRISTIAN FREDRICKSON, a citizen of the United States, and a resident of Cameron, in the county of Barron and State of Wisconsin, have invented a new and Improved Automatic Trip for Conveyers, of which the following is a full, clear, and exact description.

My invention has for its object to provide an automatic trip for conveyers which are adapted to travel on a wire or a rail, the mechanism for actuating the trip being a gear wheel which is secured to one of the wheels which serves as a support for the conveyer, the said gear wheel meshing with a second gear wheel, there being secured to the gear wheel, a wheel having indentures therein, a stud to which the second gear wheel is secured also serving as a support for a cam wheel, which has an indenture on its periphery, the last named wheel being rotatably mounted on the stud and having an arm which is adapted to engage the indentures in the wheel secured to the second gear wheel. The wheel with the indenture in its periphery engages a wheel with teeth which are adapted to engage the indenture, the periphery of the said wheel with the indenture fitting between the said teeth until the indenture reaches one of the teeth, when the wheel is rotated slightly, there being an arm secured to the last named wheel with the teeth, the arm being so disposed as to operate the trip to permit the automatic unloading of the conveyer hopper.

In this specification I will describe the preferred form of my invention, but I do not limit myself thereto, as I consider myself entitled to all forms and embodiments of the invention which may be held to fall within the scope of the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, in which

Figure 1 is a perspective view showing the application of my trip to a conveyer, the conveyer being shown in use on a wire stretched from a barn to a pole some distance therefrom; Fig. 2 is an enlarged side elevation of a conveyer to which my automatic trip has been applied; Fig. 3 is an end elevation of the same; Fig. 4 is an enlarged sectional view on the line 4—4 of Fig. 2; and Fig. 5 is an enlarged sectional view on the line 5—5 of Fig. 4.

By referring to the drawings, it will be seen that the conveyer shown, to which my automatic trip is applied, may be adjusted on a wire or cable 1, which may be secured at one terminal to a barn or out-building, and at the other terminal to a pole or stake 2. The conveyer has a frame 3, to which two upwardly extending arms 4 are secured, these arms 4 being curved at their upper terminals, so as to provide bearings for pulleys 5, which are adapted to travel on the cable 1. To one of these pulleys 5 is secured a gear wheel 6, the pulleys 5 and the gear wheel 6 being mounted on a spindle 7, which is journaled at its ends in the curved upper portions of the arms 4. Meshing with this gear wheel 6 is a gear wheel 8, and to this gear wheel 8 is secured a wheel 9 having indentures 10 spaced apart, near its periphery. The gear wheel 8 is mounted on a spindle 11, which is journaled in the arm 4, and a cam wheel 12 is mounted on the spindle 11, this cam wheel 12 having a single indenture 13 in its periphery. The cam wheel 12 has an arm 14 having a spring terminal 15 adapted to engage the indenture 10 in the wheel 9; and as the cam wheel may be revolved on the spindle 11, the relative position of the cam wheel 12 with reference to the wheel 9 may be fixed by means of the engagement of the spring terminal 15 of the arm 14 with one of the indentures 10. A frame member 16 is secured to the arm 4, and to this frame member 16, is yieldingly secured a bearing 17, in which a stud 18 is journaled. This bearing 17 is held yieldingly upwardly, by means of a spring 19. Mounted on the stud 18 is a gear wheel 20, which has teeth which are adapted to engage the indenture 13 in the cam wheel 12, the periphery of the cam wheel 12 being adapted to fit the periphery of the gear wheel 20 between its teeth. To the face of this cam wheel 20, is pivoted an arm 21, a stop 22 being secured to the face of the cam wheel 20 to prevent the movement of the arm 21 in one direction, and a spring 23 being provided to hold the arm 21 yieldingly against the said stop 22. Pivoted to the frame member 16 is a bell crank lever 24, which has one arm so disposed as to lie in the path of the arm 21 when the gear wheel 20 rotates. To the other arm of the bell crank lever 24, is

pivoted a rod 25 and to the lower terminal of this rod 25 is pivoted the trip 26, the trip 26 being pivoted to the frame of the conveyer and the other arm of the trip fitting a niche in the hopper 27. To the frame member 16 is secured a stop 28, which is adapted to prevent the movement of the bell crank lever 24 out of position. A spring 29 is provided, to hold the trip in engagement with the hopper 27. The hopper 27 is so pivoted to the frame 3, that when the trip 26 is released, the weight of the hopper will cause it to swing on its bearings so the contents thereof will be discharged. It will also be understood that by raising or lowering the cable 1 at either end, the direction of movement of the conveyer will be regulated.

In using my invention, the conveyer is run from the building to the place where the material is to be deposited, when the trip operating mechanism is examined and the cam wheel 20 is rotated until the arm 21 is in engagement with the upwardly extending arm of the bell crank lever 24. The spring terminal 15 of the arm 14 of the cam wheel 12 is then lifted from engagement with one of the indentures in the wheel 9, and the cam wheel is rotated on the stud 11 until the indenture therein engages one of the teeth of the gear wheel 20. The conveyer may then be run back to the building, when the hopper may be filled and the conveyer may be run out on the cable 1, with the assurance that the trip operating mechanism will free the trip at the predetermined place, so that the material conveyed in the hopper will be deposited at the position required. By the movement of the arm 14 from one indenture to another, the material may be deposited a slight distance nearer or further away from the place where the previous load was deposited. Should a wagon be under the cable, the material may be evenly distributed therein, without the necessity of moving the wagon or leaving the building after the position of the wagon has been ascertained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a conveyer, a trip which is adapted to permit the conveyer to deposit its load automatically, a supporting wheel, and means connected with the supporting wheel and which are operated thereby which are adapted to actuate the trip at a predetermined time.

2. In a conveyer, a hopper, a trip which is adapted to permit the hopper to deposit its load automatically, a supporting wheel for the hopper, adjustable means connected with the supporting wheel and which are operated thereby which are adapted to actuate the trip, and means to secure the said adjustable means so that the trip will be actuated at a predetermined time.

3. In a conveyer, a trip, a supporting wheel, a member, means by which the supporting wheel is adapted to rotate the said member, means which are adjustable with reference to the said member, means to secure the said means to the said member so it will be operated thereby, and means which are adapted to be operated by the means adjustable with reference to the said member, the last named means being adapted to actuate the trip.

4. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adjustable with reference to the said wheel, means to secure the cam wheel in a predetermined relationship with reference to the said wheel, a gear wheel which is adapted to be operated by the said cam wheel, and means connected with the gear wheel which are adapted to actuate the trip.

5. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, means which are adjustable with reference to the said wheel, means to secure the said means in a predetermined relationship with reference to the said wheel, means to operate the trip, the said means being adapted to be operated by the means adjustable with reference to the said wheel, and means to hold yieldingly together the means which are adjustable with reference to the said wheel and the means which are adapted to operate the trip.

6. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adjustable with reference to the said wheel, means to secure the cam wheel in a predetermined relationship with reference to the said wheel, a gear wheel which is adapted to be operated by the said cam wheel, means connected with the gear wheel which are adapted to actuate the trip, and means to hold the cam wheel and gear wheel yieldingly together.

7. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adjustable with reference to the said wheel, means to secure the cam wheel in a predetermined relationship with reference to the said wheel, a gear wheel which is adapted to be operated by the said cam wheel, and an arm on the gear wheel which is adapted to operate the trip.

8. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adjustable with reference to the said wheel, means to secure the cam wheel in a predetermined relationship

with reference to the said wheel, a gear wheel which is adapted to be operated by the said cam wheel, an arm on the gear wheel which is adapted to operate the trip, and means to hold the cam wheel and gear wheel yieldingly together.

9. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, means which are adjustable with reference to the said wheel, the said wheel having a series of notches therein, an arm on the means which are adjustable with reference to the said wheel, the said arm being adapted to fit the said notches, and means to operate the trip, the said means being adapted to be operated by means adjustable with reference to the said wheel.

10. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adapted to be adjusted with reference to the said wheel, a series of notches in the said wheel, an arm on the cam wheel which is adapted to engage the said notches and hold the cam wheel in a predetermined relationship with reference to the said wheel, a gear wheel, the gear wheel being adapted to be operated by the cam wheel, and means which are operated by the gear wheel which are adapted to actuate the trip.

11. In a conveyer, a trip, a supporting wheel, a wheel, means by which the supporting wheel is adapted to rotate the said wheel, a cam wheel which is adapted to be adjusted with reference to the said wheel, a series of notches in the said wheel, an arm on the cam wheel which is adapted to engage the said notches and hold the cam wheel in a predetermined relationship with reference to the said wheel, a gear wheel, the gear wheel being adapted to be operated by the cam wheel, means which are operated by the gear wheel which are adapted to actuate the trip, and means to hold the cam wheel and gear wheel yieldingly together.

12. In a conveyer, a trip, a supporting wheel, a gear wheel which is secured thereto, a second gear wheel which meshes with the first gear wheel, a member which is secured to the second gear wheel, means which are adapted to be adjusted with reference to the said member, means to secure the said means in a predetermined relationship with reference to the said member, and means which are operated by the first named means which are adapted to actuate the trip.

13. In a conveyer, a trip, a supporting wheel, a gear wheel secured thereto, a second gear wheel which meshes with the first gear wheel, a member secured to the second gear wheel, a cam wheel which is adapted to be adjusted with reference to the said member, means which are adapted to secure the said cam wheel in a predetermined relationship with the said member, a gear wheel which is adapted to be operated by said cam wheel, and means which are adapted to be operated by the said gear wheel, which are adapted to actuate the trip.

14. In a conveyer, a trip, a supporting wheel, a gear wheel secured thereto, a second gear wheel which meshes with the first gear wheel a member secured to the second gear wheel, a cam wheel which is adapted to be adjusted with reference to the said member, means which are adapted to secure the said cam wheel in a predetermined relationship with the said member, a gear wheel which is adapted to be operated by said cam wheel, means which are adapted to be operated by the said gear wheel which are adapted to actuate the trip, and means to hold the cam wheel yieldingly together.

15. In a conveyer, a trip, a supporting wheel, a gear wheel secured thereto, a second gear wheel which meshes with the first gear wheel, a member secured to the second gear wheel, a cam wheel which is adapted to be adjusted with reference to the said member, means which are adapted to secure the said cam wheel in a predetermined relationship with the said member, a gear wheel which is adapted to be operated by said cam wheel, and an arm on the last named gear wheel which is adapted to actuate the trip.

16. In a conveyer, a trip, a supporting wheel, a gear wheel secured thereto, a second gear wheel which meshes with the first gear wheel, a member secured to the second gear wheel, a cam wheel which is adapted to be adjusted with reference to the said member, means which are adapted to secure the said cam wheel in a predetermined relationship with the said member, a gear wheel which is adapted to be operated by said cam wheel, an arm on the last named gear wheel, and means to hold the cam and gear wheels yieldingly together.

17. In a conveyer, a trip, a supporting wheel, a gear wheel secured thereto, a second gear wheel which meshes with the first gear wheel, a member secured to the second gear wheel, the said member having a series of notches therein, means which are adjustable with reference to the said member, an arm secured to the said means which is adapted to engage the said notches, and means which are adapted to be operated by the said means and which are adapted to operate the trip.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTIAN FREDRICKSON.

Witnesses:
HENRY PETERSON,
C. H. MUSEUS.