(No Model.)

C. L. JUDGE.

ALARM DEVICE FOR MILLS.

No. 534,158. Patented Feb. 12, 1895.

Fig. 1.

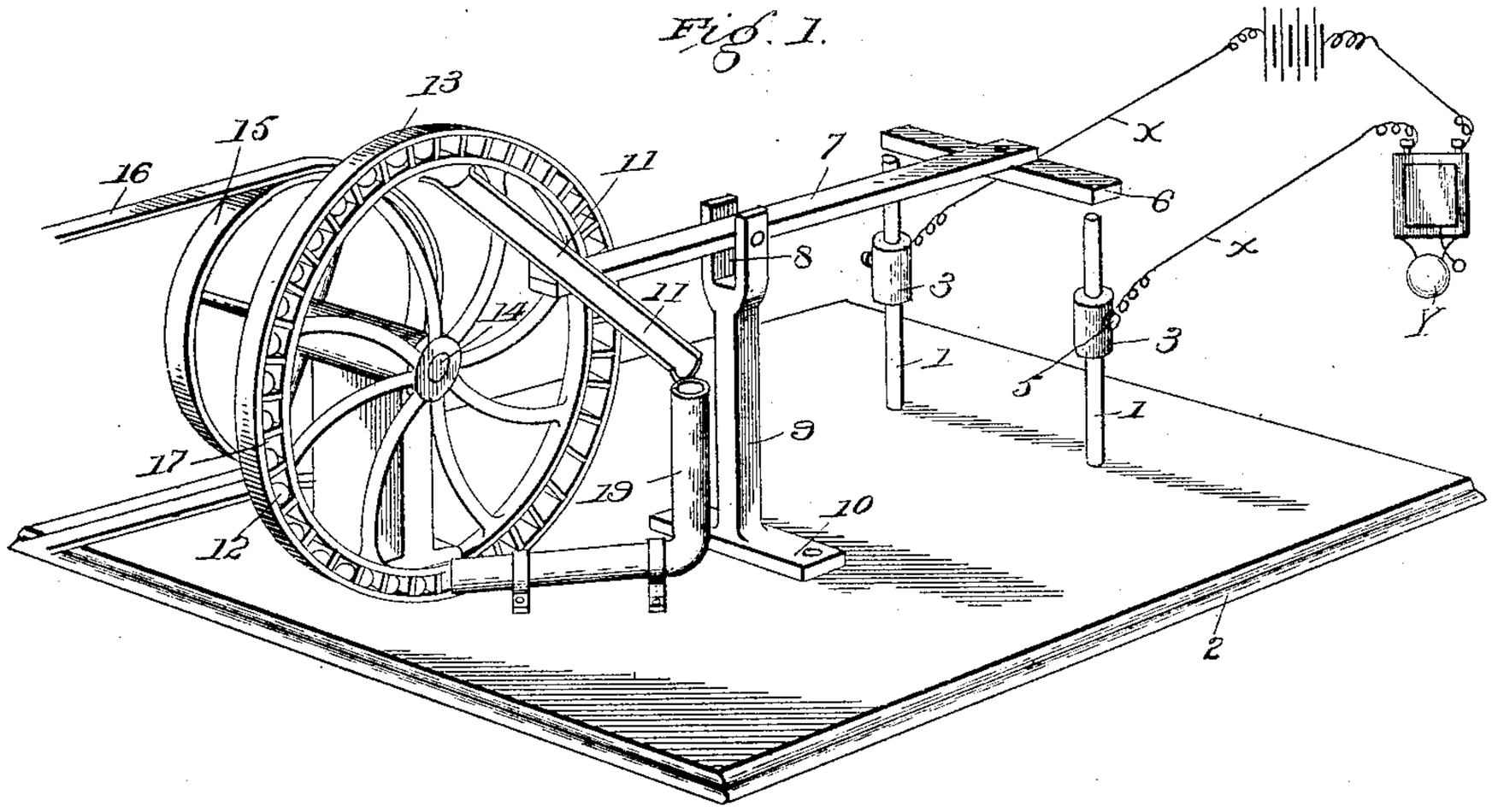


Fig. 3.

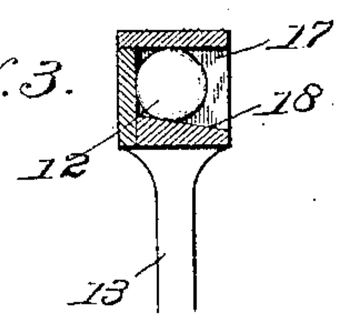
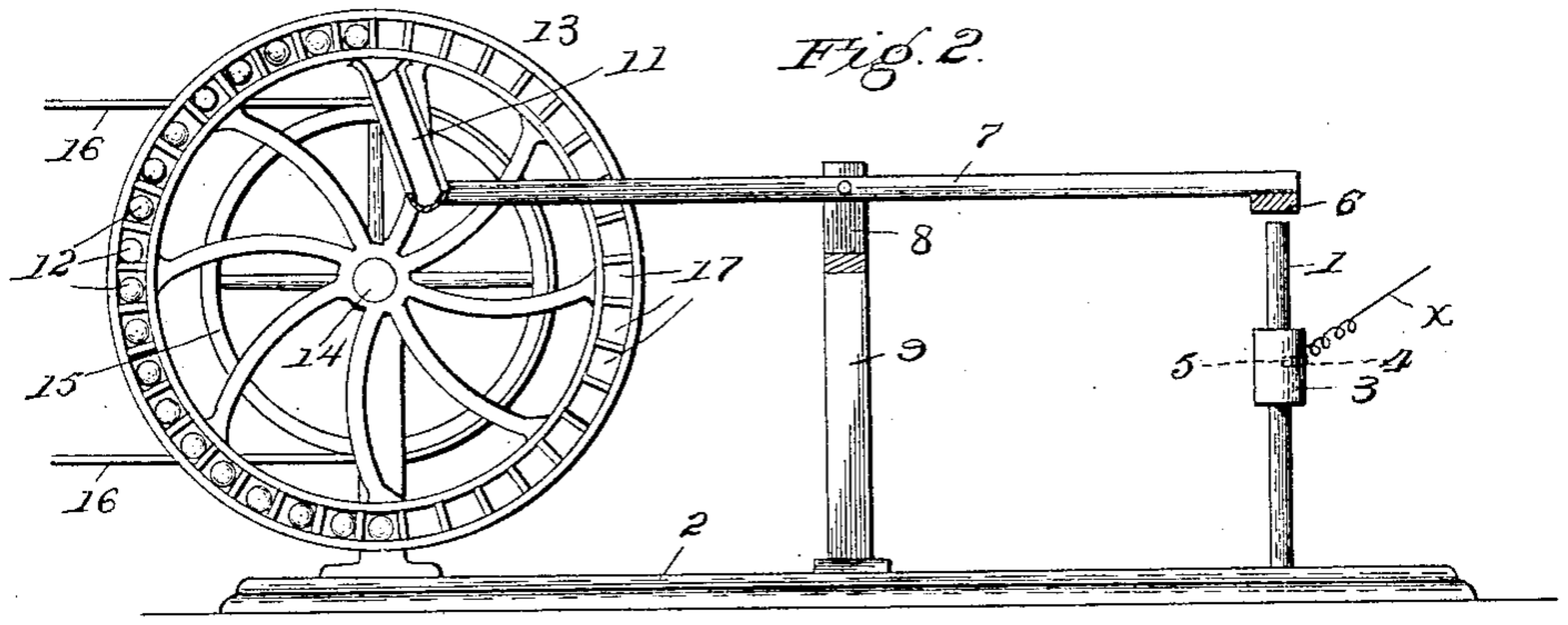


Fig. 2.



Inventor

Charles L. Judge

Witnesses
F. M. Johnson
D. P. Wallace

By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES LEE JUDGE, OF AUSTIN, PENNSYLVANIA.

ALARM DEVICE FOR MILLS.

SPECIFICATION forming part of Letters Patent No. 534,158, dated February 12, 1895.

Application filed November 5, 1894. Serial No. 527,902. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE JUDGE, a citizen of the United States, residing at Austin, in the county of Potter and State of Pennsylvania, have invented a new and useful Alarm Device for Mills, of which the following is a specification.

This invention relates to alarm devices for mills; and it has for its object to provide a new and useful device of this character especially adapted for use in connection with the elevators or conveyers for mills, to provide simple and efficient means for automatically indicating immediately the stoppage of such elevators or conveyers from any cause.

To this end the main and primary object of the present invention is to construct an alarm device with special reference to its usefulness in connection with mills and the like, the materials for which are usually carried by elevators or conveyers, which frequently cease to run from a variety of causes well known in the art, and such stoppage of the elevators or conveyers often occurs without the immediate knowledge of the operators.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings:—Figure 1 is a perspective view of an alarm device for mills constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a detail sectional view of the rim of the wheel.

Referring to the accompanying drawings, 1—1 designate a pair of spaced upright contact posts that are suitably supported on a base 2, and said upright contact posts 1—1, are provided at a point intermediate of their ends with the attaching collars 3, provided with wire openings 4, to receive the ends of the circuit wires X, that are held in said collars by means of the binding screws 5, and the said circuit wires X, are included in the circuit of a suitable electric bell Y to provide for giving an alarm when the circuit is closed thereover. Arranged to work above and onto the upper ends of the contact posts 1, is a circuit closing bar 6, which, when resting on the upper ends of said posts, serves to close the circuit thereover to provide for closing the alarm circuit.

The circuit closing bar 6, is attached to one end of an oscillating lever 7, that is pivotally mounted at a point intermediate of its ends in the upper bifurcated end 8, of a bearing upright 9, having a lower flanged end 10, secured on the base 2, of the device. The end of the lever 7, to which the bar 6, is attached, normally overbalances its opposite end, and therefore the bar 6, normally rests on top of the contact posts to close the circuit thereover. The end of the lever 7, opposite the circuit closing bar 6, has suitably secured thereon an inclined chute 11, the upper end of which is adapted to receive the weight balls 12, from a revolving bucket wheel 13. The revolving bucket wheel 13 is arranged to rotate at one side of the inclined chute 11, and is mounted on one end of a rotating shaft 14, supported over the base 2, and carrying on its opposite end a belt wheel 15, over which passes the belt 16, that is connected to the elevator or conveyer in connection with which the alarm is to be given.

The revolving bucket wheel 13, is provided with a peripheral series of buckets or pockets 17, that are adapted to carry the weight balls 12, and said buckets or pockets are open at one side and are provided with inclined bottom portions 18, that serve to discharge the balls from the wheel when the same reach a point directly at one side of the upper end of the inclined chute 11, and as the wheel continues to revolve, while the elevator or conveyer is working properly, the weight balls 12, will always be passing down the inclined chute 11, so as to keep the end of the lever 7, to which the chute is attached, overbalanced, and will therefore elevate the bar 6, above the contact posts to maintain an open circuit.

The lower end of the inclined chute 11, is arranged to direct the weight balls into the upper end of an L-shaped feed tube 19, the lower end of which is arranged adjacent to the lower side of the wheel 13, to provide for feeding the balls into the buckets of the wheel, as the same revolves. Immediately upon the stoppage of the elevator or conveyer, the shaft 14, geared therewith, ceases to rotate and stops the rotation of the wheel

13, and the inclined chute 11, being then relieved of the weight of the balls, allows the heavy end of the levers 7, to fall and close the circuit through the posts 1, through the connecting medium of the bar 6.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a device of the class described, a pair of spaced upright contact posts included in a suitable alarm circuit, a pivotally supported oscillating lever carrying at one end a circuit closing bar working over said contact posts, a ball chute attached to the end of the lever opposite the circuit closing bar, a tube arranged under the lower end of the ball chute, and means for elevating weight balls from said tube onto the high end of said ball chute to provide for overbalancing the end of the lever carrying the circuit closing bar, substantially as set forth.

2. In a device of the class described, a pair of spaced upright contact posts included in a suitable alarm circuit, a pivotally supported oscillating lever carrying at one end a circuit closing bar working over said contact posts, a ball chute attached to the end of the lever opposite the circuit closing bar, and means for automatically and continuously delivering weight balls onto said inclined chute to overbalance the end of the lever to which it is attached, substantially as set forth.

3. In a device of the class described, a pair of spaced upright contact posts included in a suitable alarm circuit, a pivotally supported oscillating lever carrying at one end a circuit closing bar adapted to work over and contact with said posts, an inclined ball chute attached to the end of the lever opposite the bar, a suitably arranged rotating shaft geared with an elevator conveyer or similar apparatus, a revolving bucket wheel attached to and carried by said shaft and provided with a peripheral series of open buckets or pockets, weight balls adapted to be carried in the buckets or pockets of the wheel and delivered onto said chute, and an L-shaped feed tube for the wheel arranged at one side of the same and under the lower end of said ball chute, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES LEE JUDGE.

Witnesses:
A. C. PERKINS,
F. S. THOMAS.