

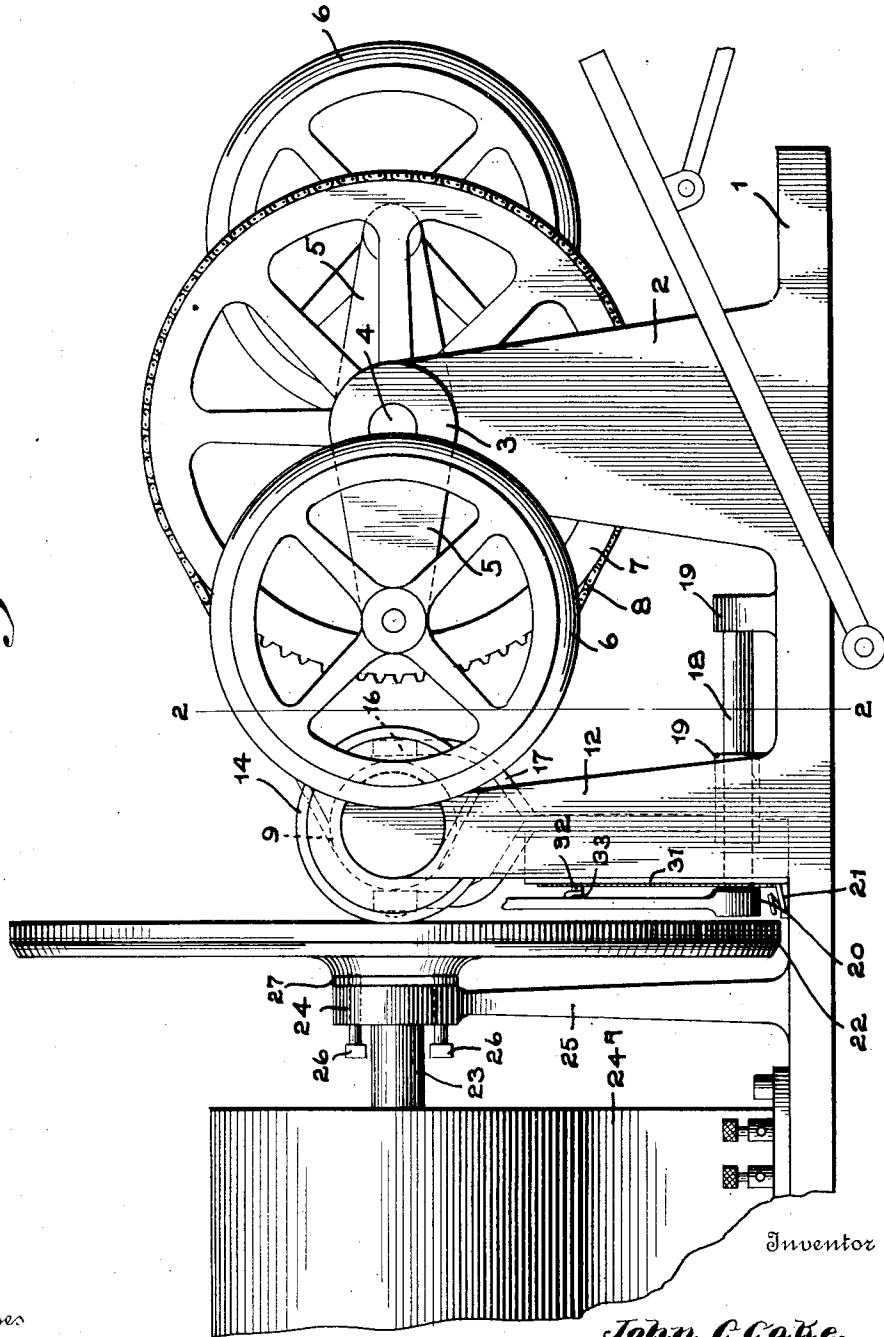
J. C. CAKE.
 PEDAL OPERATOR.
 APPLICATION FILED JULY 16, 1912.

1,085,108.

Patented Jan. 27, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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R. H. Frankel

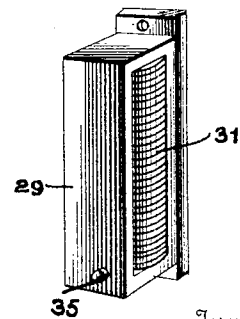
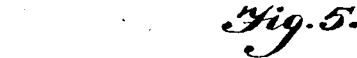
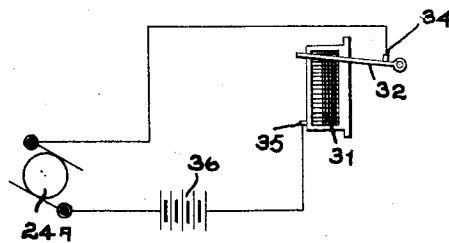
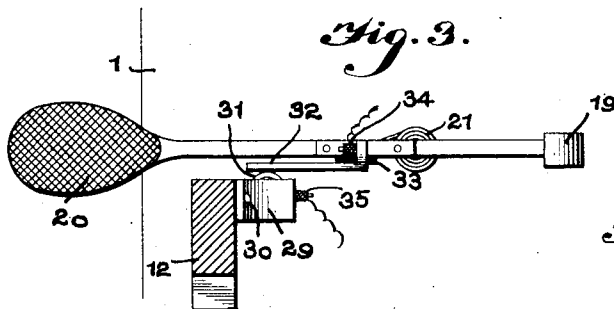
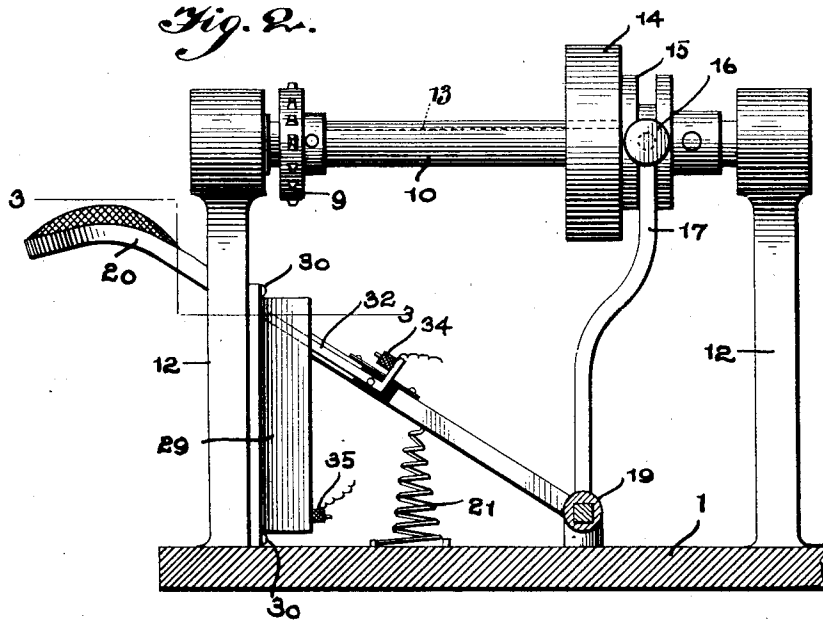
John C. Cake.
 By *Joshua R. Fosse*
 Attorney

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2 SHEETS-SHEET 2.



Inventor

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UNITED STATES PATENT OFFICE.

JOHN C. CAKE, OF CHESTER, PENNSYLVANIA.

PEDAL-OPERATOR.

1,085,108.

Specification of Letters Patent.

Patented Jan. 27, 1914.

Original application filed January 12, 1911, Serial No. 602,437. Divided and this application filed July 15, 1912. Serial No. 709,339.

To all whom it may concern:

Be it known that I, JOHN C. CAKE, a citizen of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Pedal-Operators, of which the following is a specification.

My invention relates to improvements in pedal operators, the object of the invention being to provide improved mechanical means for operating the pedals of pneumatic pianos, organs, and the like in which the speed of the mechanical means is increased and decreased coextensive with the increase and decrease of electric current supplied to a motor driving the mechanical means.

This invention is a division of my application filed January 12, 1911, and given Serial No. 602,437.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1 is a view in side elevation showing the electric motor partly broken away and illustrating my improvements. Fig. 2 is a view in section on the line 2—2 of Fig. 1 with parts omitted for purposes of clearness. Fig. 3 is a view in section on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of my improved resistance, and Fig. 5 is a diagram.

In connection with my improved electrical control, I have illustrated the same in connection with my improved pedal operator claimed in a separate application executed on even date herewith, and in which 1 represents a base having brackets 2 thereon provided with bearings 3 at their upper ends in which a shaft 4 is mounted. On this shaft 4 at its ends, crank arms 5 are secured and support rubber tired wheels 6 which are adapted to engage pedals (not shown) or other suitable devices to cause them to move upwardly and downwardly as the crank shaft is revolved.

Power is transmitted to a relatively larger sprocket wheel 7 secured to shaft 4 by means of an endless chain 8 which is passed around a relatively small sprocket 9 on a shaft 10. This shaft 10 is positioned parallel to shaft 4 and is preferably supported in the upper

ends of uprights 12 on base 1. This shaft 10 is provided with a longitudinal groove 13 in which a friction pulley 14 is keyed to slide. This pulley 14 at one side, is provided with a grooved hub 15 into which pins 16 on the ends of a forked arm 17 project. This forked arm 17 is secured upon an angular shaft 18 mounted to turn in brackets 19 on base 1, and to this shaft 18 a foot lever 20 is secured. By depressing this foot lever 20, the forked arm 17 is swung in one direction to slide the friction pulley 14, while a spring 21 returns the parts to normal position. The friction wheel 14 engages the face of a friction disk 22 which is secured on a drive shaft 23 supported in a bearing 24 on the upper end of a bracket 25 fixed to base 1. In this bearing 24, set screws 26 are located and bear against a collar 27 on shaft 23. By adjusting these screws 26, the engagement of the disk 22 with the friction pulley 14 can be regulated to produce the best results.

As seen in Fig. 1, the pulley 14 is located approximately at the center of disk 22, so that little if any motion will be transmitted from the disk to the pulley. As the foot lever 20 is depressed, the arm 17 will compel the pulley to move longitudinally of shaft 10 and radially of disk 22 toward the outer edge of the latter. As the pulley 14 is moved outwardly, the speed of transmission will be increased on account of the increased diameter of the disk in engagement with the pulley. When therefore, the device is in operative position, the speed may be readily controlled by operating the foot lever 20, the downward movement of said lever increasing the speed and the upward movement of the lever through the medium of spring 21, causing the pulley to move inwardly reducing the speed. The shaft 23 is driven by an electric motor 24^a and the electric current supplied this motor is controlled by the foot lever 20. A box 29 of insulation is secured by screws 30 to upright 12, and is provided with a coil or other resistance 31 which projects beyond the face of the box. With this resistance coil 31, a spring contact 32 engages. This contact 32 is secured to a block of insulation fixed to foot lever 20 and provided with a binding post 34, and the lower end of the resistance coil 31 is connected to a binding post 35.

As seen in the diagram of Fig. 5, the con-

tact 32 and resistance 31 are in an electric circuit including a battery or other source of electricity supply 36, and the motor 24. When the motor starts, the lever will be in its highest position, so that the maximum of resistance is in the circuit. As the foot lever 20 is depressed to move the pulley radially of the disk, the contact 32 will be moved along the resistance coil to cut out the resistance and thereby increase the electric current supplied the motor. It will thus be seen that as the mechanical means are operated to increase the speed of the device, the electric means will be simultaneously operated to increase the power of the motor, thus the electrical and the mechanical means will be simultaneously and uniformly controlled by the operation of a single foot lever.

As above stated, I do not limit myself to the particular material forming the resistance and various other changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

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

1. In a pedal operator, the combination with pedal engaging means, mechanical mechanism controlling the speed of the

pedal engaging means, an electric motor driving the pedal operator, and means operated by the speed controlling means for controlling the electric power transmitted to the motor, substantially as described.

2. A pedal operator comprising pedal operating means, an electric motor driving said means, electrical resistance in circuit with a source of electricity supply and said motor, a lever controlling the speed of the mechanical transmission, and a contact on said lever movable against the resistance and cutting out the resistance as the speed of the mechanical transmission is increased, substantially as described.

3. A pedal operator comprising pedal operating devices, a friction disk, an electric motor driving the friction disk, a friction pulley engaging the face of the friction disk and transmitting motion to the pedal operating means, a lever constructed to move said pulley across the face of the disk, a resistance coil, a contact on the lever engaging said resistance coil, and said contact, said resistance coil, and said motor included in an electric circuit with a source of electricity supply, substantially as described.

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

JOHN C. CAKE.

Witnesses:

S. W. FOSTER,
CHAS. E. POTTS.