(No Model.)

W. L. MADGEN.

COIN FREED MACHINE.

No. 490,450. Patented Jan. 24, 1893.

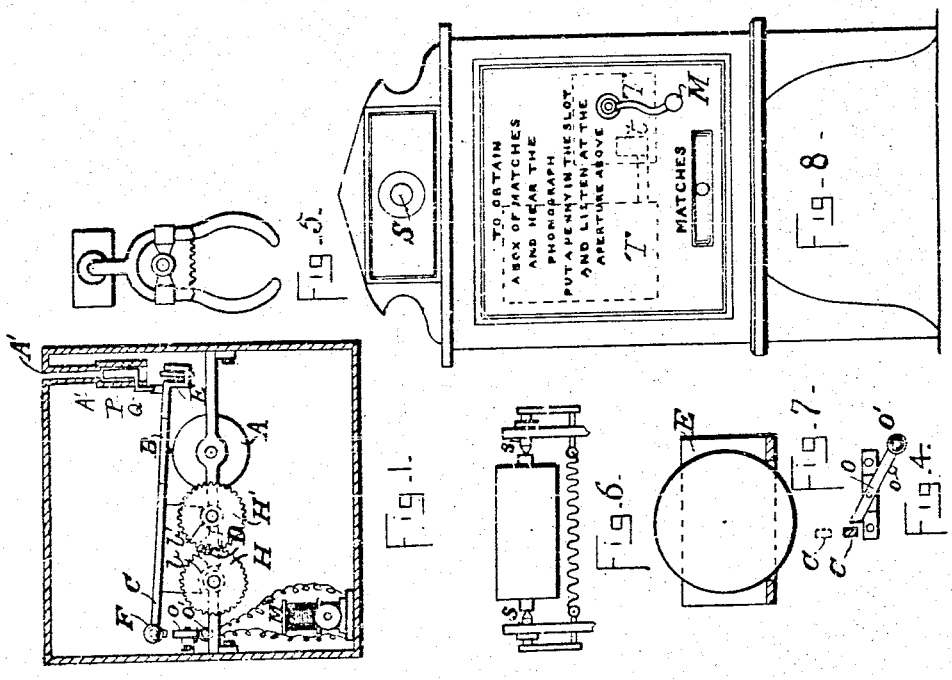

Fig. 5.

Fig. 8.

Fig. 1.

Fig. 6.

Fig. 7.

Fig. 4.

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM LEONARD MADGEN, OF LONDON, ENGLAND.

COIN-FREED MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,450, dated January 24, 1893.

Application filed April 10, 1890. Serial No. 347,407. (No model.) Patented in England December 7, 1888, No. 17,937.

To all whom it may concern:

Be it known that I, WILLIAM LEONARD MADGEN, residing at London, England, have invented an Improvement in Coin-Freed Machines for Reproducing Sound and Advertising by the Same, (for which I have obtained Letters Patent in Great Britain under No. 17,937, dated December 7, 1888,) of which the following is a specification.

My invention relates to coin-feed automatic machines such as those used for selling matches, sweetmeats, photographs and such articles, and has for its object the arrangement and construction of mechanism alone or in combination with such machines so that they shall give forth sounds, such as songs by celebrated singers, or sentences advertising people's goods upon the insertion of a coin, or token into the machine, either for the purpose of obtaining a box of matches or sweets or other goods or for hearing the re-production of a song by a celebrated artist, or of a combined effect of the re-production of sound accompanying the automatic delivery of goods.

I wish it to be distinctly understood that there are many methods by which my invention may be carried into effect without departing from the essence of the same, but in order that it may be the better understood I will now proceed to describe one form of machine in relation to the drawings hereunto annexed, reference being had to the letters marked thereon.

Like letters and numerals refer to like parts throughout the figures.

Figure 1 is an end sectional elevation of one form of my apparatus. Fig. 2 is a side elevation with the coin directing chutes and the casing in section, one side being arranged for hand operation, the other side by an electro motor. Fig. 3 is a plan of Fig. 2. Fig. 4 is a side view of the retaining catch for locking the machine when mechanically worked by hand. Fig. 5 is a view of the ear tubes which may be conveniently used to hear the reproduction of the phonograph record. Fig. 6 shows a simple method of supporting the impression cylinders so that they may be easily changed. Fig. 7. is a sectional view of the coin carrying frame or receptacle on the diaphragm lever. Fig. 8 is an outside view of an automatic match-box machine with my apparatus attached thereto.

To carry out my invention I mount a cylinder, or other block A, upon which the sound vibrations are registered in such a manner that it may be suitably driven by clock work, electric, manual, or pedal power so that upon a coin, or token being dropped into the receiving slot the clock work or other mechanism is released, or the circuit of an electric motor is completed, and the mechanism is accordingly operated. I may cause either the phonograph cylinder to move longitudinally, relatively to the diaphragm or equivalent by the diaphragm to the cylinder.

In Figs. 1, 2 and 3 I show the diaphragm B adapted to move longitudinally along the phonographic cylinder. This diaphragm is mounted upon a lever C. pivoted upon a rod D. supported in the side frames. At one extremity of the lever C. a receptacle E. for holding a coin is attached, a hole being provided in the bottom of this receptacle E., which will allow of a half penny passing through, but which is small enough to retain a penny. Upon the opposite end of the lever C. a counter balance weight F., is arranged, which, when the lever C. is not depressed by the weight of the coin, raises the diaphragm B, away from the periphery of the cylinder A. Upon each side of the parallel rod D. I arrange two screws G. G.′ having threads of the same hand. These screws are geared together by cog wheels H. and H.′ Upon the opposite end of the screw G, I arrange another cog wheel I, which gears into the cog wheel K., upon the cylinder A.

I have shown in Figs. 2 and 3 alternative methods of driving the mechanism, the right hand phonograph being adapted to move by hand through a crank lever and friction clutch, and the left hand by an electro-motor. In the first case the friction clutch is attached to a spindle G^{11}, and in the second case a pulley L is attached to the spindle G^{12} and conveniently connected to the electro-motor M′ by means of a strap.

The coin receptacle E. is so made that when the coin drops from the slot it shall rest within the receptacle as shown in Fig. 7, and as the lever B. nears the end of its travel along the cylinder A the projection N comes in con-

tact with the coin, and pushes it from the receptacle into a box, or into another receptacle or passage which shall convey it to the coin freeing mechanism, match box, or other apparatus as the case may be.

Fig. 4 shows a view of the catch O arranged for retaining the mechanism in the hand driven machine illustrated on the right hand side of Figs. 2 and 3. This catch is pivoted upon a support on the frame casing and is maintained in the position shown in Fig. 4 by a counter-balance weight O′ resting on a small stop *o*. The lever C is shown in section in its lower and upper position, the upper one being dotted. When the lever C has reached the extreme end of the phonographic cylinder and the projection N has pushed out the coin from its receptacle E the counter-balance weight F lowers the hand lever C from the dotted position to that shown in full, when then the lever C at the end of its travel comes in contact with the catch O its upper end is depressed and the counter-balance weight lifted allowing the passage of the lever C which latter when passed allows the catch O to drop down into the position shown in Fig. 4 similar in connection to the ordinary latch of the door.

The edge wall of the coin slide, is recessed to receive the shutter P, which passes in between the side walls of the slide as shown in Fig. 1, this shutter having a right angled extension as at Q, serving as a pivot and passing through the side wall A′ of the coin slide. This shutter has a weight *q*, shown in Fig. 2, which tends to keep the shutter normally intercepting the coin passage, but the shutter is moved out of the passage by a projection 4, on the end of the lever C, coming in contact with the arm *p* projecting from the pivot of the shutter.

Fig. 5 shows a usual form of ear tubes which may be suitably arranged on the machine in order to convey more perfectly to a person listening any sound that may result from the working of such phonograph.

I may arrange two or more record cylinders within the same machine for example having records of songs by various singers as shown in Figs. 1, 2 and 3. The coins are directed to the respective cylinders on one side or the other of the receptacle by the arm R pivoted at the apex of the two slides, with its end projecting into the space leading to both, and this arm may be operated by a handle on the outside.

In order to easily replace or substitute the phonographic cylinders in the machine for others I mount them upon spring-pressed centers *s s* thus affording great facility in the manipulation of replacing the same.

Fig. 8 shows the ordinary form of a coin-freed match-box machine having my phonograph fixed at T, the handle M and the listening orifice S being shown. The coin after leaving the coin-receptacle E, may as usual in many such machines, operate a second device, such as a match-holder or the like.

The operation of my mechanism is as follows.—The coin being inserted through the slot A′, falls into the receptacle E and depresses the coin end of the lever C against the counter balancing action of the weight F causing the diaphragm B to rest upon the periphery of the cylinder A at the same time causing the half nut *b*, to engage itself with the screw G′ and at the same time disengaging by lifting from the catch O which will make a closed electric circuit or release a clockwork escape, or when the machinery is hand driven will enable the lever *c*., Fig. 4, by being raised to pass over the retaining point of the catch O so that upon the revolution of the apparatus either by the handle M and spring clutch *m* or by electric, or or other motive power through the pulley L, the cylinder A, will be revolved, and the diaphragm lever C, will be moved along its length. Upon the receptacle E nearing the end of its stroke it comes in contact with the projection N, the end of such projection gradually forces the coin from the receptacle E until it falls into any suitable box or coin slot of the match box or similar coin freeing mechanism. Directly the coin has left the receptacle E the weight F throws the lever round about its center D. so as to remove the diaphragm B away from the cylinder surface and disengages the half nut *b* from its screw G and engages the other half nut *b′*. with its screw G′. so that by the continued revolution of the mechanism the diaphragm lever C is brought back, until its end F depresses the upper part pivoted catch O raising the lower part which breaks the electric motor circuit indicated by 4ª, Fig. 2 or locks the escapement movement of a clock work motor or when rotated by hand engages behind the lever C. directly it has passed the same and come home on the buffer *t* and prevents the further operation of the motive mechanism or machine until the lever has been again depressed by the insertion of another coin.

What I claim as my invention and desire to secure by Letters Patent is.—

1. In combination with a rotating impression cylinder, a counterbalanced pivoted lever, a vibrating diaphragm carried thereby, a coin receptacle also carried by said lever, the said lever and the impression cylinder being adapted to move longitudinally, with respect to one another, substantially as described.

2. In combination with a rotating impression cylinder, a counterbalanced pivoted lever, a vibrating diaphragm carried thereby, a coin receptacle also carried by said lever, means for moving the lever back and forth, and a pivoted retaining catch O, substantially as described.

3. In combination with a rotating impression cylinder, a weighted pivoted lever, a vi-

brating diaphragm carried thereby, a coin receptacle also carried by said lever, means for moving said lever longitudinally of the cylinder, a coin slide, a shutter P for obstructing the said coin slide, said shutter being operated by the end of the pivoted lever, substantially as described.

4. In combination with a rotating impression cylinder, a weighted pivoted lever, a vibrating diaphragm carried thereby, a coin receptacle also carried by said lever and parallel screws driven from a source of power, and engaging said pivoted lever to move it back and forth, substantially as described.

5. In combination with a rotating impression cylinder, driven from a source of power, parallel screws driven by gear connections with the cylinder shaft and each other, a weighted lever pivoted between the screws and driven therefrom, a diaphragm carried by said lever, a coin receptacle also carried thereby, and a catch O, substantially as described.

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

WILLIAM LEONARD MADGEN.

Witnesses:

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