

No. 622,607.

Patented Apr. 4, 1899.

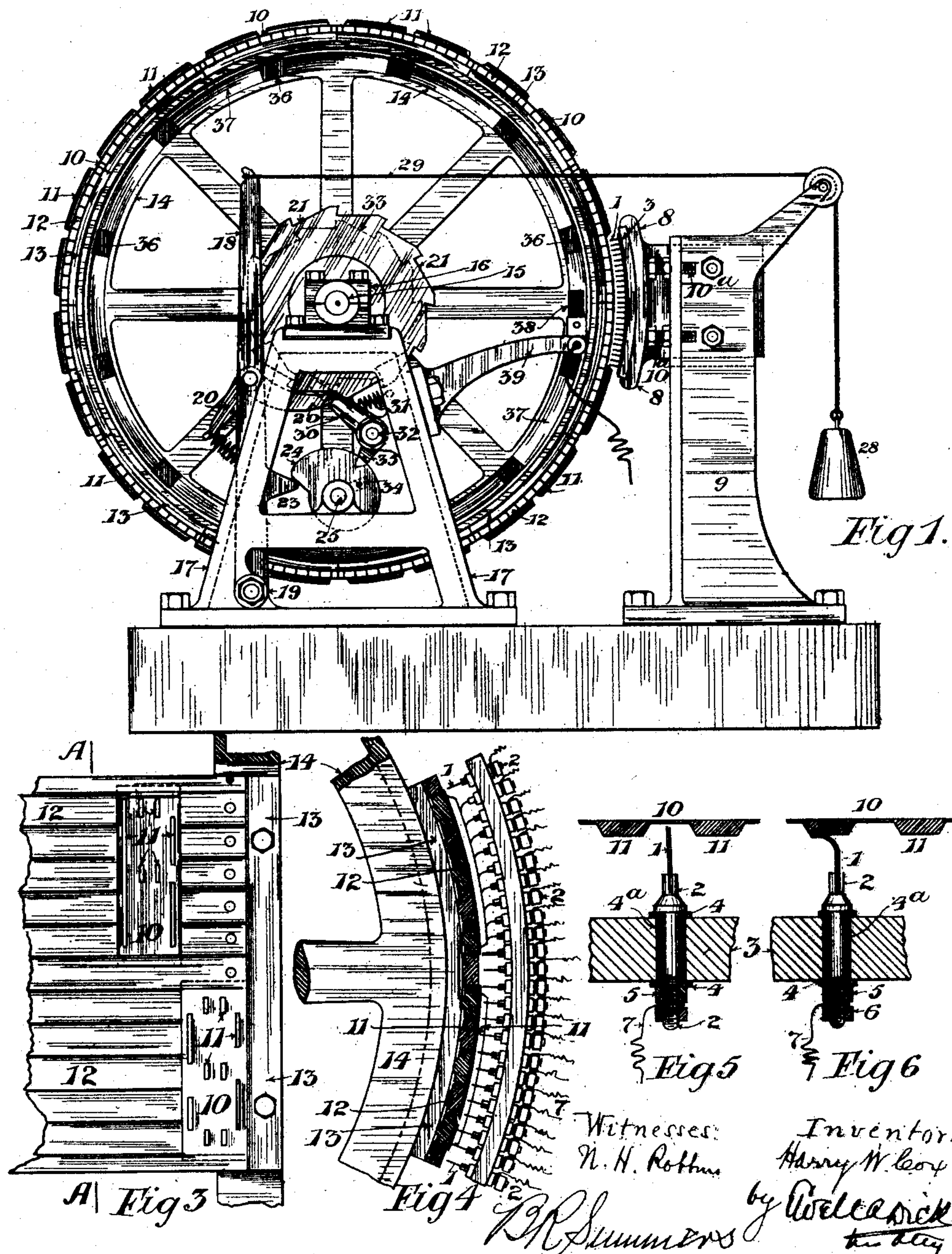
H. W. COX.

ELECTRICAL ADVERTISING MACHINE.

(Application filed July 15, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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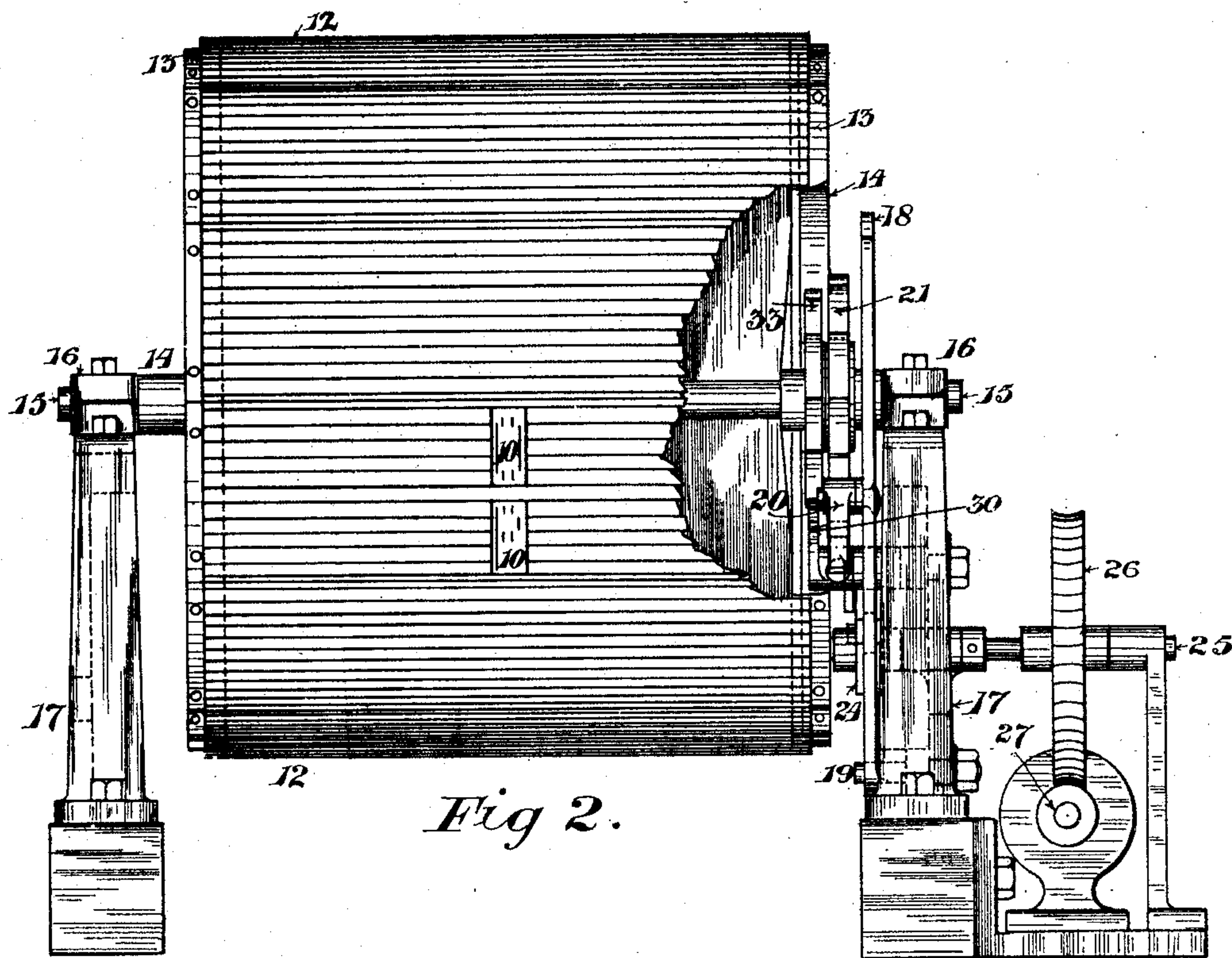


Fig 2.

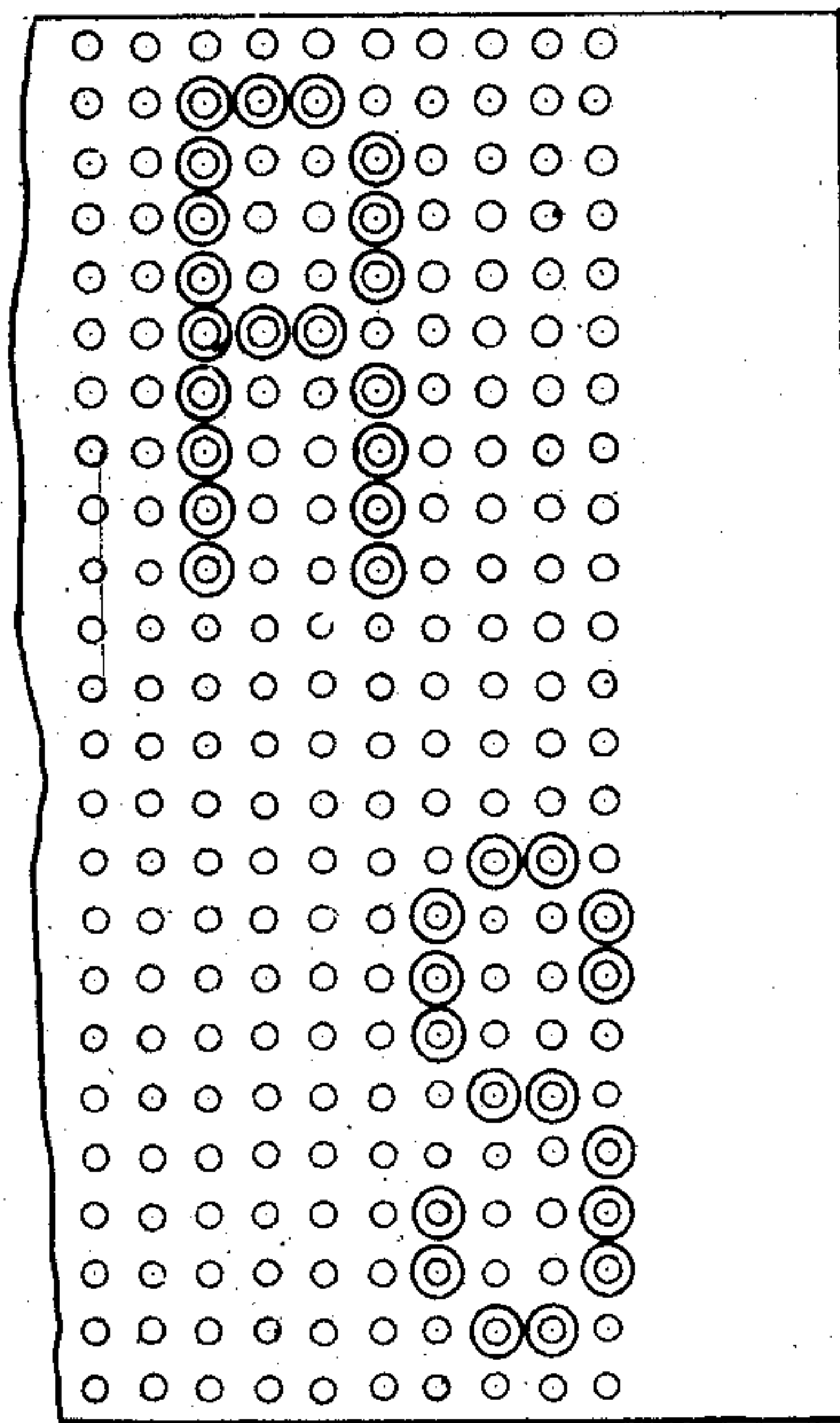


Fig 7.

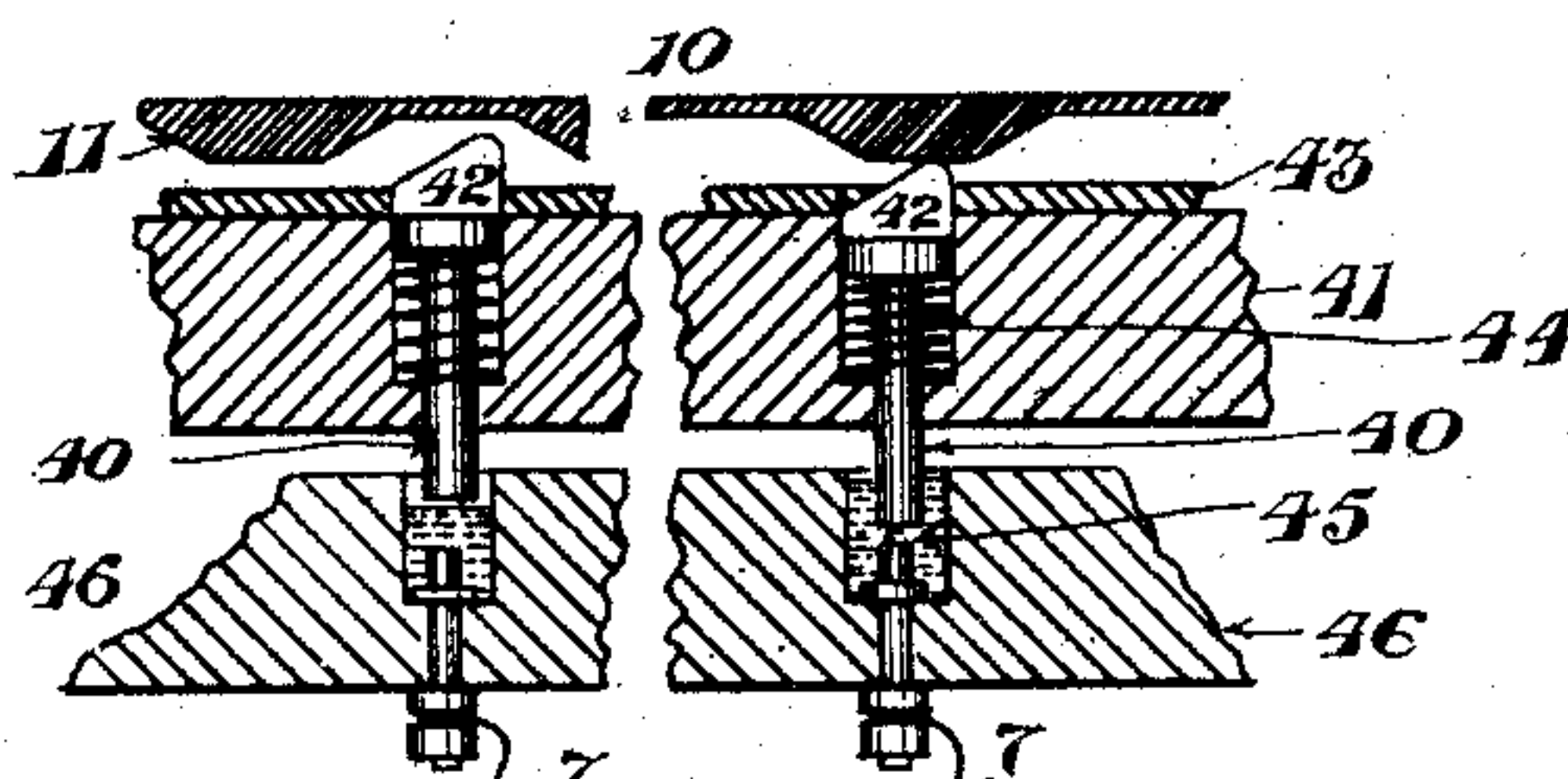


Fig 8.

Fig 9.

Witnesses:
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Inventor:
Harry W. Cox
by *E. W. Cox*
his atty

UNITED STATES PATENT OFFICE.

HARRY WILLIAM COX, OF NOTTINGHAM, ENGLAND.

ELECTRICAL ADVERTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 622,607, dated April 4, 1899.

Application filed July 15, 1898. Serial No. 686,085. (No model.)

To all whom it may concern:

Be it known that I, HARRY WILLIAM COX, a subject of the Queen of Great Britain, and a resident of the city of Nottingham, in the county of Nottingham, England, have invented certain new and useful Improvements in Electrical Advertising-Machines, (for which an application for a patent has been filed in Great Britain, bearing date January 19, 1898, No. 1,489,) of which the following is a specification.

This invention relates to improvements in electrical advertising-machines in which there are a number of electric lamps and means for automatically selecting certain combinations of such lamps to form one or more letters, words, or other devices.

In the accompanying drawings, which are hereinafter referred to in the detailed description of the machine, Figure 1 is a side elevation of the selecting portion of the machine, the motor driving the same being omitted. Fig. 2 is a side elevation of the selecting portion of the machine, part of the drum being broken to show the ratchet mechanism. Fig. 3 is an enlarged detail in elevation of part of the selecting-drum, showing the selecting-plates in position. Fig. 4 is a section on the line A A, Fig. 3. Fig. 5 is a section of the brush-holding plate, showing the relative positions of the brush and selecting-plate out of contact. Fig. 6 is a section of the brush-holding plate, showing the relative positions of the brush and selecting-plate in contact. Fig. 7 is a diagram referred to in explanation of the arrangement of the lamps and the brushes. Fig. 8 is a section showing a mercury contact-cup, pusher, and selecting-surface with the electrical connection broken; and Fig. 9 is a section showing a mercury contact-cup, pusher, and selecting-surface with the electric circuit completed.

The lamps used for the display of the selected advertisement are carried by any suitable framework, which is arranged according to the position it is to occupy. On this frame the lamps are arranged in horizontal and vertical lines, as represented by the circles in Fig. 7. One wire from each lamp is connected to the main, while the other wires are connected to brushes which are arranged in rows corresponding exactly with the lamps.

In the diagram the double circles represent the lamps lighted for the letters R and S and also the particular brushes through which the connections are made.

The brushes shown in Figs. 5 and 6 consist of a flexible metallic end 1, which is fastened to a shank, and this latter is fitted in the brush-holding plate 3 and insulated therefrom by insulating-washers 4 and sleeve 4^a. The ends of the shanks 2 are provided with nuts 5 for holding them in the plate 3 and nuts 6 for holding the coupling-wires. The plate 3 is fastened at both ends to angle-pieces 8, Fig. 1, which are fitted to slide in guides formed on the standards 9, adjusting-screws 10^a being provided for regulating the distance between the brushes and the drum.

The plates 10, by which contact is made with the brushes, are preferably metallic and are made with raised portions 11, according to the sign, letter, or device to be reproduced. The ends of the plates 10 are bent, as shown in Fig. 4, to fit between bars 12, which are shaped accordingly. These bars 12 are fixed to end pieces 13 and form frames which are fastened to wheels 14. The plates 10 can thus be readily arranged to form any advertisement within the compass of the lamps and the frames easily removed from the wheels. Each frame is large enough to carry sufficient contacts to light up the whole of the lamps and any one of the same. The wheels 14 are fixed upon a shaft 15, which is fitted to rotate in bearings 16 on the standards 17, and in the machine shown the wheels are designed to carry twelve frames.

The wheels, with the frames hereinafter referred to, as the drum is rotated intermittently by ratchet mechanism, comprising a lever 18, which is fulcrumed at 19 and provided with a pawl 20, which is held in gear with the ratchet-wheel 21 by a spring 22. The lever also is provided with a nose 23 and is moved in one direction by a cam 24 on a shaft 25, which is coupled by worm-gearing 26 to a motor-shaft 27, or it may be driven by gearing or other means from any convenient source of power. The nose 23 of the lever 18 is held in contact with the cam 24 by means of a weight 28, which is coupled thereto by a cord 29 and is sufficiently heavy to rotate the drum when the nose 23 is clear of

the top point of the cam 24, this being arranged to admit of the rapid movement of the drum and change of the advertisement. There are also a stop-pawl 30 and second
 5 ratchet-wheel 33. The pawl 30 is pivoted at 32 and is held in gear with the wheel 33 by a spring 31, and just previous to the rotation of the drum the pawl 30 is moved out of gear
 10 by a piece 34 on the cam 24 coming into contact with a lever 35, attached to the pawl 30. The flange of one or both wheels 14 is fitted with as many contact-plates 36 as there are frames on the drum, and between such
 15 plates there are pieces 37 of vulcanite or other non-conducting material. The connection for the current is made by a brush 38, which is carried by an arm 39 from the standard 17, or any other form of main switch may be used. When the plates 10, with the projections
 20 11, are made of wood or other non-conducting material, the brushes are replaced by plungers 40, Figs. 8 and 9. These plungers are fitted to slide in holes in a plate 41 and their beveled ends 42 in slots in a plate 43 to
 25 prevent them turning, while they are normally held in their highest position by springs 44. The circuit is completed by pressing the plungers into a mercury-cup 45 or by means of spring-pins carried by the plate 46.
 30 In the machine here described, the lamps being coupled to the brushes and the plates 10 placed on the frames to form the desired advertisement, the motor is started. This rotates the cam 24 and pushes back the lever
 35 18 until its pawl engages with the next tooth of the wheel 21. At the same time the pawl 30 is disengaged from the wheel 33 and the highest part of the cam having passed the nose 23 the weight 28 comes into action and
 40 rotates the drum. As this moves the contact-piece 36 passes from under the brush 38 and all the lighted lamps are extinguished, but are relighted immediately the next piece 36 comes into contact with the brush 38, by which
 45 time the lamps to be lighted will have been

selected by the raised portion of the plates 10 coming into contact with the brushes in the plates 3.

Having now described my invention, what I desire to secure by Letters Patent in the 50 United States is—

1. The combination of a pair of wheel-frames removably fastened thereto, removable plates carried by the frames and made with raised portions which represent the ad- 55 vertisement to be reproduced, brushes for making contact with the lamps to be lighted, ratchet mechanism for rotating the drum, and ratchet mechanism for limiting the motion of the drum substantially as set forth. 60

2. The combination of a drum carrying plates on which the advertisement to be reproduced is formed by raised parts, frames for carrying the plates and constructed of end pieces and connecting-bars, brushes con- 65 nected to the lamps, angle-pieces carrying the brush-plates lamps for the display of the advertisement, ratchet mechanism for actuating the drum and ratchet mechanism limiting the motion of the drum substantially as 70 herein set forth.

3. The combination of a drum carrying plates on which the advertisement to be reproduced is formed by raised portions, lamps which are selected to show the advertisement, 75 brushes for completing the circuit between the lamps and the plates on the drum, a main switch formed by contact-pieces on the wheel and a brush, a ratchet-lever and pawl for rotating the drum, a cam actuating the ratchet- 80 lever in one direction, a weight moving the lever in the other direction to rotate the drum, a limiting-pawl and wheel and a stop on the cam for releasing the last-mentioned pawl substantially as described.

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Witnesses:

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 WILLIAM HENRY POTTER.