No. 622,608. Patented Apr. 4, 1899.

H. W. COX.

ELECTRICAL ADVERTISING MACHINE.

(Application filed Sept. 15, 1898.)

(No Model.) 2 Sheets—Sheet 1.

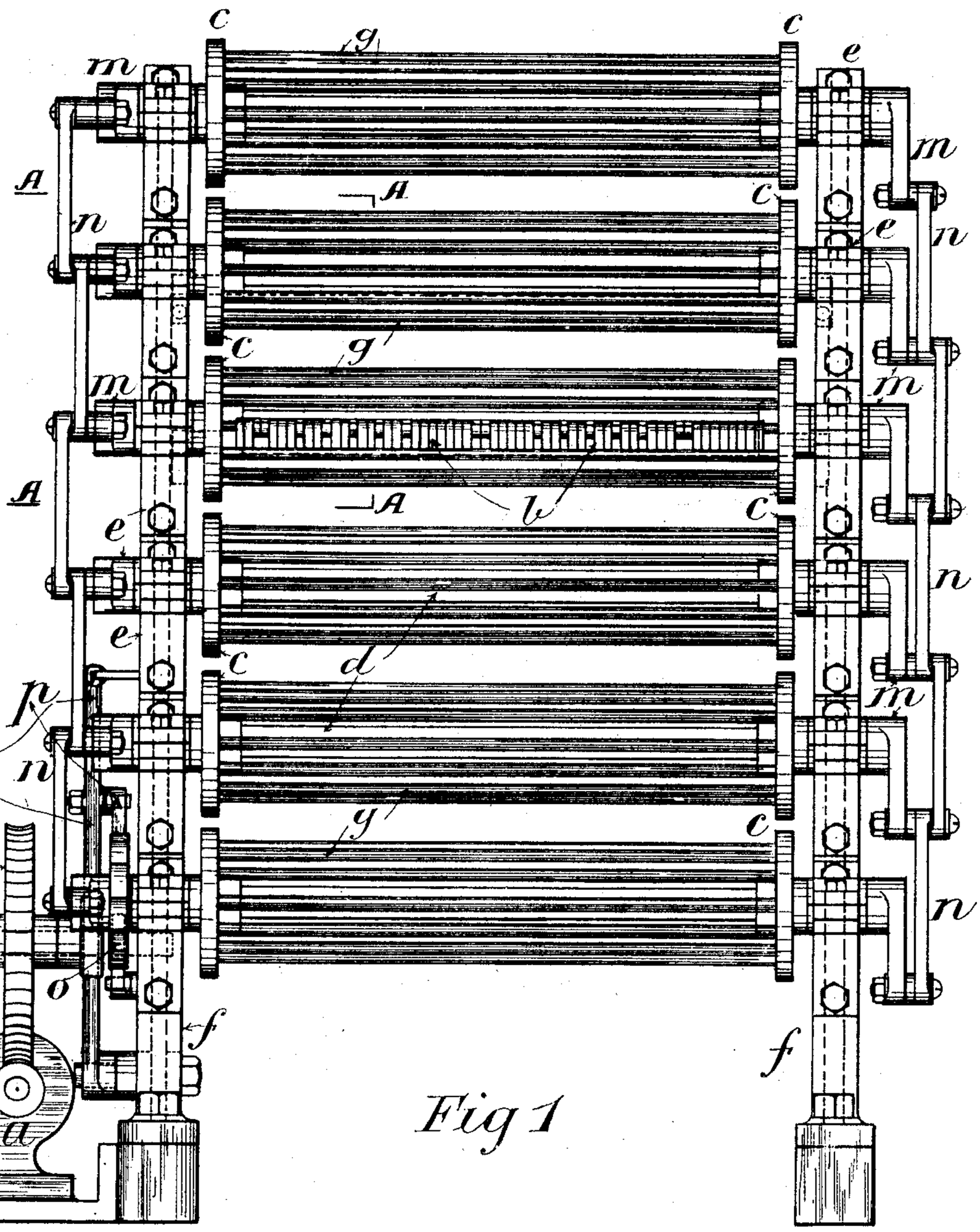

Fig 1.

Witnesses:
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J. F. Wright.

Inventor: Harry William Cox
by Ewell A. Dicky atty

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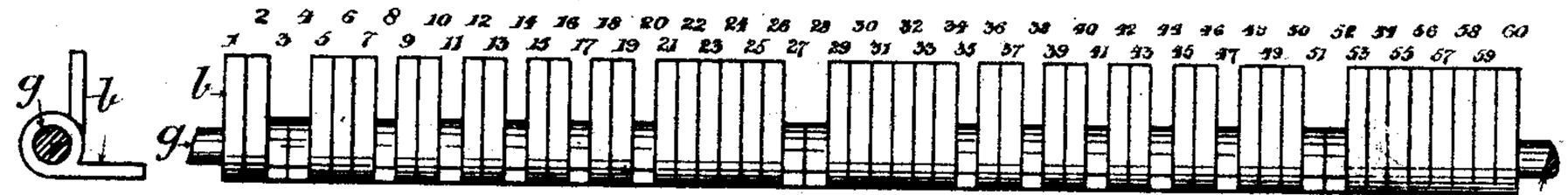

Fig 7

Fig 6

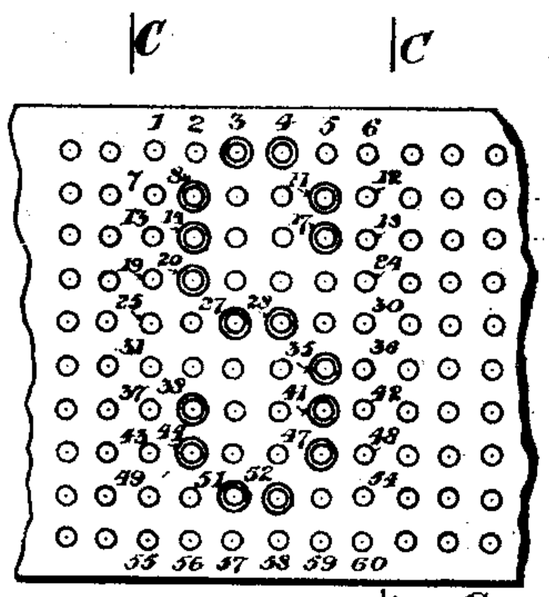

Fig 5

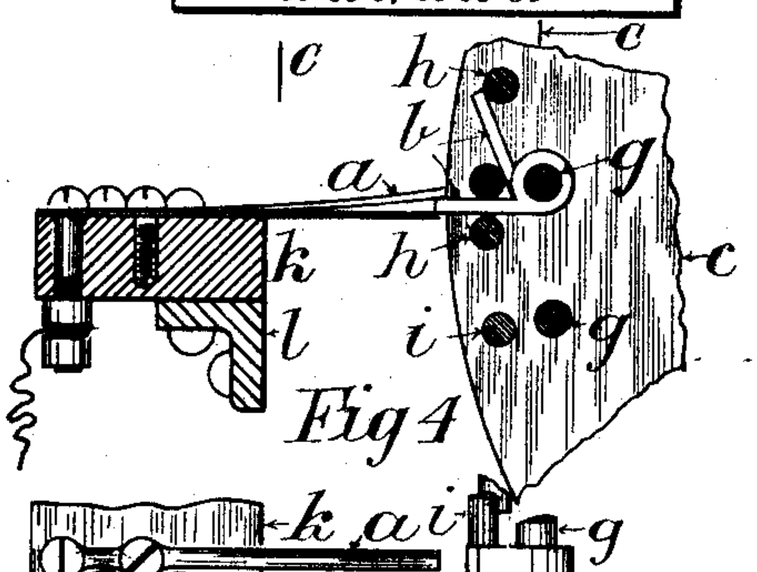

Fig 4

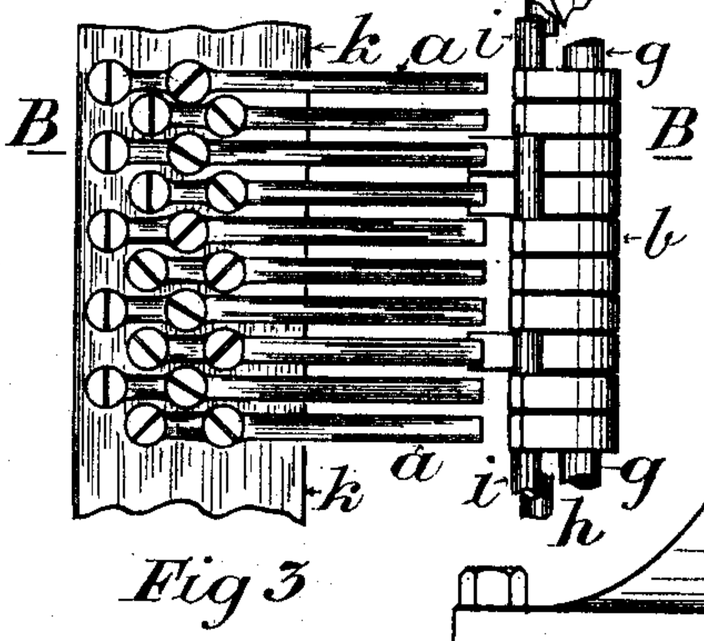

Fig 3

Fig 2

Witnesses:
D. Hamm Talbert
J. F. Wright

Inventor: Harry William Cox.
by Lowell A. Dick
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UNITED STATES PATENT OFFICE.

HARRY WILLIAM COX, OF NOTTINGHAM, ENGLAND.

ELECTRICAL ADVERTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 622,608, dated April 4, 1899.

Application filed September 15, 1898. Serial No. 691,025. (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 March 1, 1898, No. 4,946,) of which the following is a specification.

This invention relates to improvements in electrical advertising-machines, in which the advertisement is displayed by lighting certain lamps of a group.

The object of this invention is the construction of a machine by which the lamps to be lighted are selected automatically, such machine being provided with means for selecting any required lamps of the group without the use of independent means, such as jacquard-cards or their equivalent.

In the accompanying drawings, Figure 1 is a front elevation of the machine. Fig. 2 is an end elevation of the machine, showing a section on the line A A, Fig. 1, and with the driving-motor and gearing removed. Fig. 3 is a plan, to an enlarged scale, of a few of the selecting-bits and brushes or spring contact-pieces. Fig. 4 is a section on the line B B, Fig. 2. Fig. 5 is an elevation of part of a group of lamps. Fig. 6 is an elevation of one bar of selecting-bits, and Fig. 7 is an end elevation of Fig. 6.

In the particular machine shown in the drawings three hundred and sixty lamps are used, and these are arranged in ten horizontal rows with thirty-six lamps in each row. This group of lamps is divided into six sets, and each set comprises ten horizontal rows with six lamps in each row. The lamps in each set are numbered, as shown, between the lines C C, Fig. 7, and one of the wires from each lamp is coupled to a series of contact-springs or brushes *a*, while the other wire from each lamp is coupled direct to one of the main cables. The other cable is joined to the machine, and contact is made for lighting the lamps by a series of fingers *b*, which are arranged to correspond with the contact-springs or brushes *a*, these latter and the fingers *b* being numbered, as shown in Fig. 6, to correspond with the lamps in each set.

In the selecting-machine there are preferably as many cylinders as there are sets of lamps in the group, and each cylinder is provided with any convenient number of sets of fingers which represent the number of different advertisements that can be displayed in succession without altering any part of the machine. The cylinders consist of end disks *c*, mounted on shafts *d*, which revolve in bearings *e* on the side frames *f*. Between the disks *c* there are three rods *g*, *h*, and *i* for each set of fingers *b*, which are fitted to turn on the rod *g* between the rod *h* above the rod *g*, Fig. 4, and the rod *h* of the next adjacent set of fingers below the rod *g*—that is to say, the rod *h* of one set of fingers limits the upward movement of such fingers and the downward movement of the next adjacent set of fingers. The fingers required for making contact with the lamps to be lighted remain approximately in a radial position, while the fingers that are not required are turned upward, and the divided set of fingers are held in their relative positions by the rod *i*, which is passed through holes or slots in the end disks *c* and secured by nuts or other convenient fastenings.

In Fig. 5 the double circles represent the lamps required for the display of the letter "S," and these lamps correspond with the fingers shown in their operative position in Fig. 6.

The contact-springs or brushes *a* are arranged as shown and are attached to a block of vulcanite *k* or otherwise insulated from each other and the machine, the block *k* being carried by an angle-bar *l* from the frames *f*.

Outside the bearings *e* both ends of the shafts *d* are fitted with cranks *m*, those at one end being at right angles to the cranks at the opposite end, and the cranks are coupled together by links *n* to insure the simultaneous and equal movements of all the cylinders. For actuating these cylinders one of the shafts is fitted with a ratchet-wheel *o*, which is actuated by a weight or a spring *s* through a lever *q* and pawl *p*, the lever being moved against the resistance of the spring or weight to engage another tooth by a cam

r on a shaft *s'*, which is driven by worm-gearing *t* from a motor *u* or by any other convenient source of power.

In the machine herein described it has been assumed, for the sake of simplicity, that each letter is shown in one set of lamps. In practice, however, one set of lamps may be occupied by one or more letters or parts of such letters, and there may be one or more rows of letters; but in all cases the number of fingers on any one rod multiplied by the number of cylinders equals the total number of lamps in the group.

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

1. In an electrical advertising-machine the combination of a group of lamps with an equal number of spring-contacts or brushes arranged in rows, and electrically connected to the lamps, a cylinder for each row of spring-contacts or brushes, connections between the said cylinders whereby all are rotated equal distances and simultaneously, selecting-fingers carried by the said cylinders and making direct electrical connection with the lamps through the spring-contacts or brushes, means for holding the said fingers, in and out of their operative position, and ratchet mechanism for operating the said cylinders, substantially as and for the purposes hereinbefore set forth.

2. In an electrical advertising-machine, the combination of a group of lamps, spring-contacts or brushes arranged in rows with electrical connections to such lamps, a cylinder to each row of spring-contacts or brushes, selecting-fingers carried by the cylinders and making direct electrical connection with the lamps through the spring-contacts or brushes cranks and coupling-links connecting the cylinders together, and ratchet mechanism for actuating the cylinders, substantially as hereinbefore set forth.

3. In an electrical advertising-machine, the combination of a group of lamps, spring-contacts or brushes arranged in rows, a cylinder for each of such rows, selecting-fingers carried by the cylinders and making direct electrical connection with the lamps through the spring-contacts or brushes, a rod for such fingers to turn upon, a second rod for limiting the motion of the fingers, and a third rod for holding the fingers in their selected position, substantially as hereinbefore set forth.

4. In an electrical advertising-machine, the combination, of a group of lamps, spring-contacts or brushes arranged in rows, electrical connection between the lamps and spring-contacts or brushes, a cylinder for each row of contact-springs or brushes, selecting-fingers carried by the cylinders, rods for the selecting-fingers to turn upon, rods for limiting the motion of the fingers and holding them in their placed position, cranks and coupling-links whereby all the cylinders are actuated simultaneously, and ratchet mechanism for operating the same, substantially as hereinbefore set forth.

HARRY WILLIAM COX.

Witnesses:

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WILLIAM H. POTTER.