Jan. 9, 1951 G. E. HARTLEY 2,537,345

DEVICE FOR IMPARTING AN INTERMITTENT ROTARY MOTION

Filed Dec. 9, 1946 2 Sheets-Sheet 1

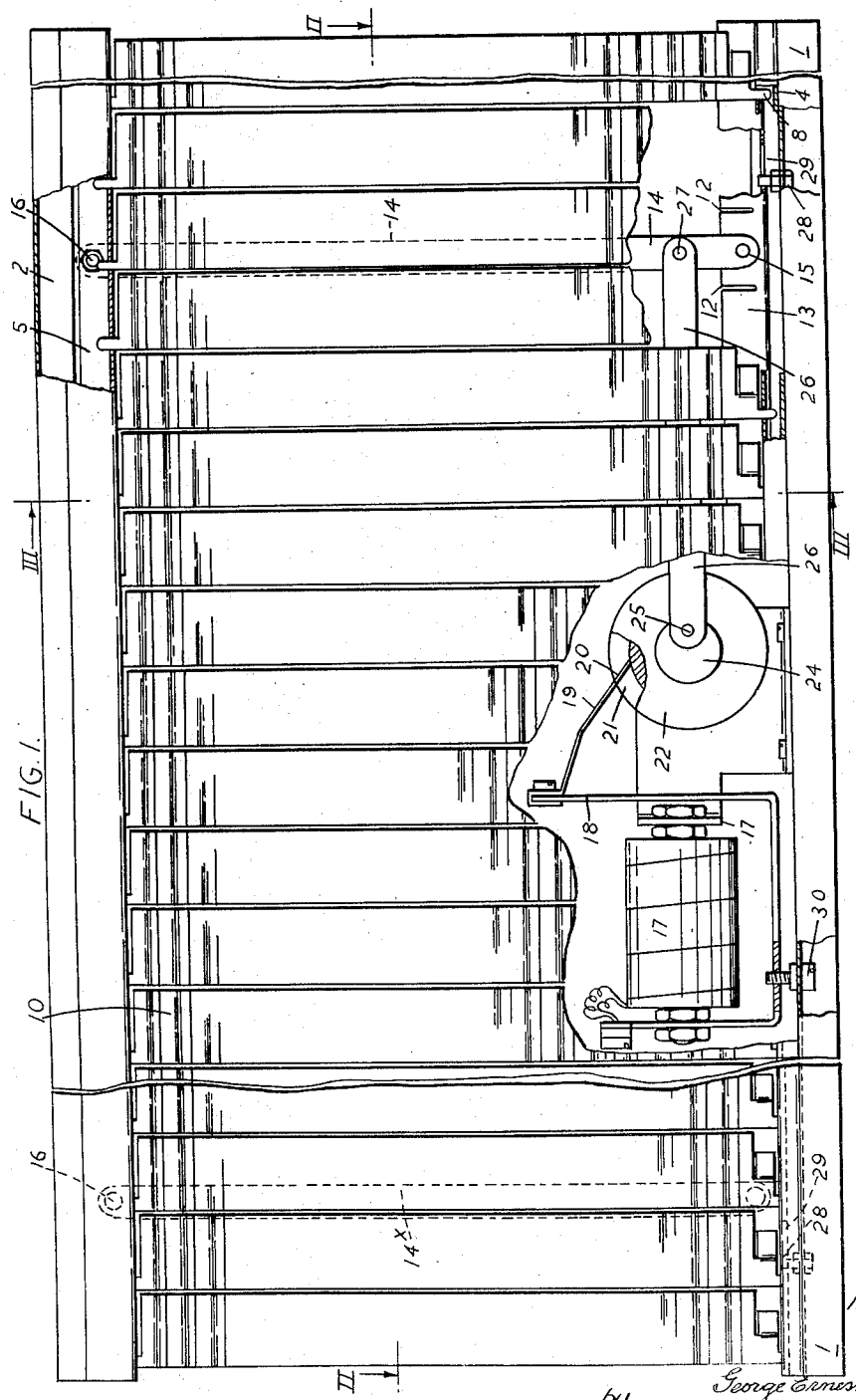


FIG. 1.

Inventor
George Ernest Hartley.
by A. Knight Heroad
Attorney

Jan. 9, 1951 G. E. HARTLEY 2,537,345

DEVICE FOR IMPARTING AN INTERMITTENT ROTARY MOTION

Filed Dec. 9, 1946 2 Sheets-Sheet 2

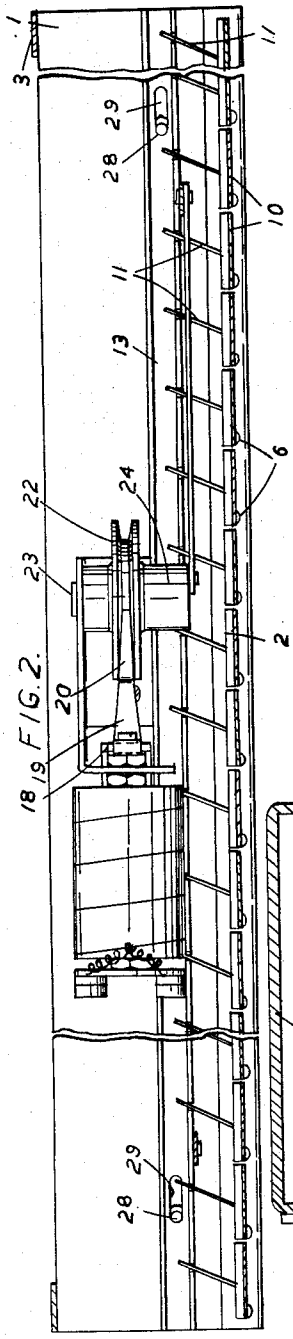


FIG. 2.

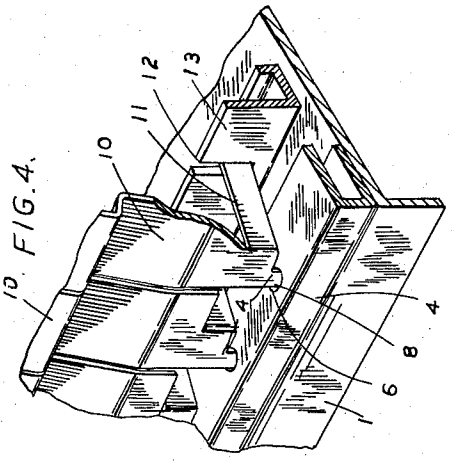


FIG. 4.

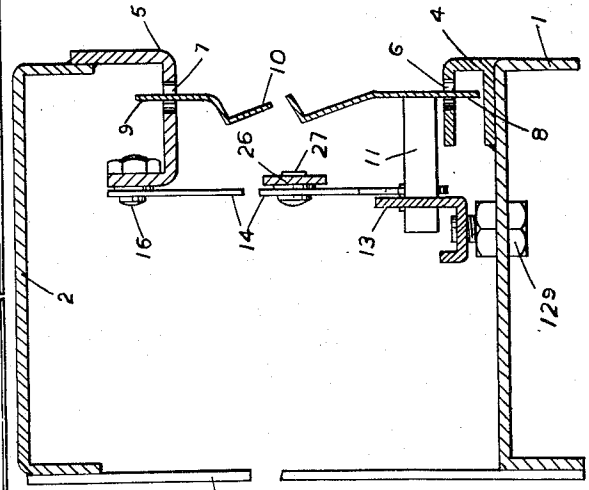


FIG. 3.

Inventor
George Ernest Hartley
by Knight & Croad
Attorney

Patented Jan. 9, 1951 2,537,345

UNITED STATES PATENT OFFICE

2,537,345

DEVICE FOR IMPARTING AN INTERMITTENT ROTARY MOTION

George Ernest Hartley, Watford, England

Application December 9, 1946, Serial No. 714,955
In Great Britain December 31, 1945

1 Claim. (Cl. 74—142)

1

This invention relates to a movable advertising device, and while the use of the invention is not so limited it will be described with particular reference to its application to advertising signs of the type having the advertising matter applied to a glass front, the said sign being illuminated by light on a plurality of reflecting shutters positioned behind the glass, said shutters being caused to rock on vertically disposed pivots.

The object of the present invention is to provide a movable advertising device having a new and improved driving motor of the type in which vibratory movement of a resilient finger connected to a vibrating armature is transmitted by friction in one direction only to a rotatable wheel to impart a step-by-step rotation thereto. Another object is to provide an improved advertising device of this character in which the driving motor will work reliably within relatively wide limits of adjustment and will work satisfactorily when the magnet is energised with alternating current of a frequency within the range normally supplied for electric lighting purposes. Further objects and features will become apparent as this specification proceeds.

When the invention is to be applied to a device in which the rotary movement of the disc is to be converted into a partial rotative or angular movement in two directions such as is necessary in the case of signs of the type above referred to, an eccentric pin is mounted on said wheel or disc, and one end of a connecting link or rod is designed to be pivotally mounted on said eccentric pin, the free or outer end of said connecting link or rod being connected to a parallel linkage operating the reflecting shutters.

In the accompanying drawings which illustrate an embodiment of the invention as applied to an advertising device of the oscillating-slat type:

Figure 1 is a front elevation of an advertising sign with part of several of the reflecting shutters cut away to show certain details of the operating mechanism.

Figure 2 is a plan view on the line II—II Figure 1.

Figure 3 is a section on the line III—III Figure 1 drawn to an enlarged scale, and,

Figure 4 is a perspective view of a detail of construction drawn to an enlarged scale.

The advertising device comprises a skeleton framework composed of a longitudinally disposed base member 1 and a longitudinally disposed top member 2 held in rigid spaced relationship by a pair of vertically disposed end members 3 disposed at each end of the base and top members 1 and 2, which latter are furnished with parts 4 and 5 respectively, each of said parts being provided with a plurality of aperture 6 and 7 respectively which serve as bearings for extensions 8 and 9 provided on each of a plurality of vertically disposed faceted reflecting shutter plates 10. Each of the shutters 10 is furnished adjacent its lower end with a rearwardly directed arm 11 arranged to engage in a vertically disposed slot 12 provided in a reciprocating member 13 disposed to the rear of the part 4, said reciprocating member being supported by a pair of links 14, 14x, pivotally connected at 15 to the member 13, said links being suspended on pivot pins 16 mounted in the part 5. A reciprocating partial rotative or angular movement is imparted to the shutters 10 by means of an electro magnetic device 17, actuated by alternating current which imparts a trembler action to the armature 18 of such device, said armature being provided with a spring finger 19 having a tapered end 20 arranged to coact with a peripheral groove 21 provided in a wheel or disc 22 rotatably mounted on a stub axle 23 rigidly mounted on the base member 1. The disc 22 is provided with a boss 24 having an eccentrically disposed pin 25 on which is pivoted a link 26 the other end of which is pivoted at 27 on the link 14.

2

In operation, the oscillating movement of the armature 18 and thereby of the spring finger 19 in one direction imparts a partial rotative movement to the disc 22 but in the reverse direction the tapered end 20 of the finger 19 is withdrawn from the groove 21, the arrangement being such that a continuous step-by-step rotative movement is imparted to the disc 22 and a reciprocatory partial rotative or angular movement in two directions is imparted to the shutter plates 10.

The reciprocating member 13 is preferably furnished with means for maintaining same in correct parallel relationship with the part 4 secured to the base 1, and, such means may consist of the upwardly directed pins 28 secured in the base 1 by nuts 129 the upwardly directed ends being arranged to pass through slots 29 provided in the member 13.

As it may be desirable at times to vary the frequency of the oscillations of the shutter-slats 10, means, such as the set screw 30, may be provided for varying the gap between the end of core of the electro-magnet and the armature 18 and thus the stroke of the latter.

It will be understood that the motor device forming the essential feature of this invention

may be utilised for imparting rotary motion to turn tables for displaying various articles, for example in shop windows and the like.

What I claim is:

In an advertising device having a rigid frame with a plurality of movable parts mounted therein means for actuating said movable parts comprising a supporting bracket mounted on said frame, an electro-magnetic device mounted in said supporting bracket, a rotary wheel also mounted in said supporting bracket with its axis at right angles to the axis of the armature of the electromagnetic device, said rotary wheel having on one side a stub axle for mounting it in said supporting bracket and on the other side an eccentrically disposed boss; a link element connected at one end to said boss and at the other end to said movable parts for transmitting motion thereto, a pair of outwardly tapering flanges provided on the periphery of said wheel defining an inwardly tapering groove between them, and a spring metal finger secured to the armature of said electro-magnetic device for endwise movement therewith, the free end of said finger being outwardly tapered for frictional engagement in said peripheral groove at an angle to the radius of the wheel at the point of contact therewith,

the said outwardly tapered free end of said finger being in wedging relationship with said inwardly tapering groove upon movement of said finger in the direction towards which its free end points, said finger being adapted on the movement of the armature in one direction partially to rotate the wheel and thus impart on intermittent movement to said movable parts.

GEORGE ERNEST HARTLEY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
429,857	Loftus	June 10, 1890
1,577,460	Franca	Mar. 23, 1926
1,761,146	Muck	June 3, 1930
2,123,361	Hollis	July 12, 1938

FOREIGN PATENTS

Number	Country	Date
362,696	Italy	Sept. 1, 1938
691,751	France	July 21, 1930
812,446	France	Feb. 1, 1937