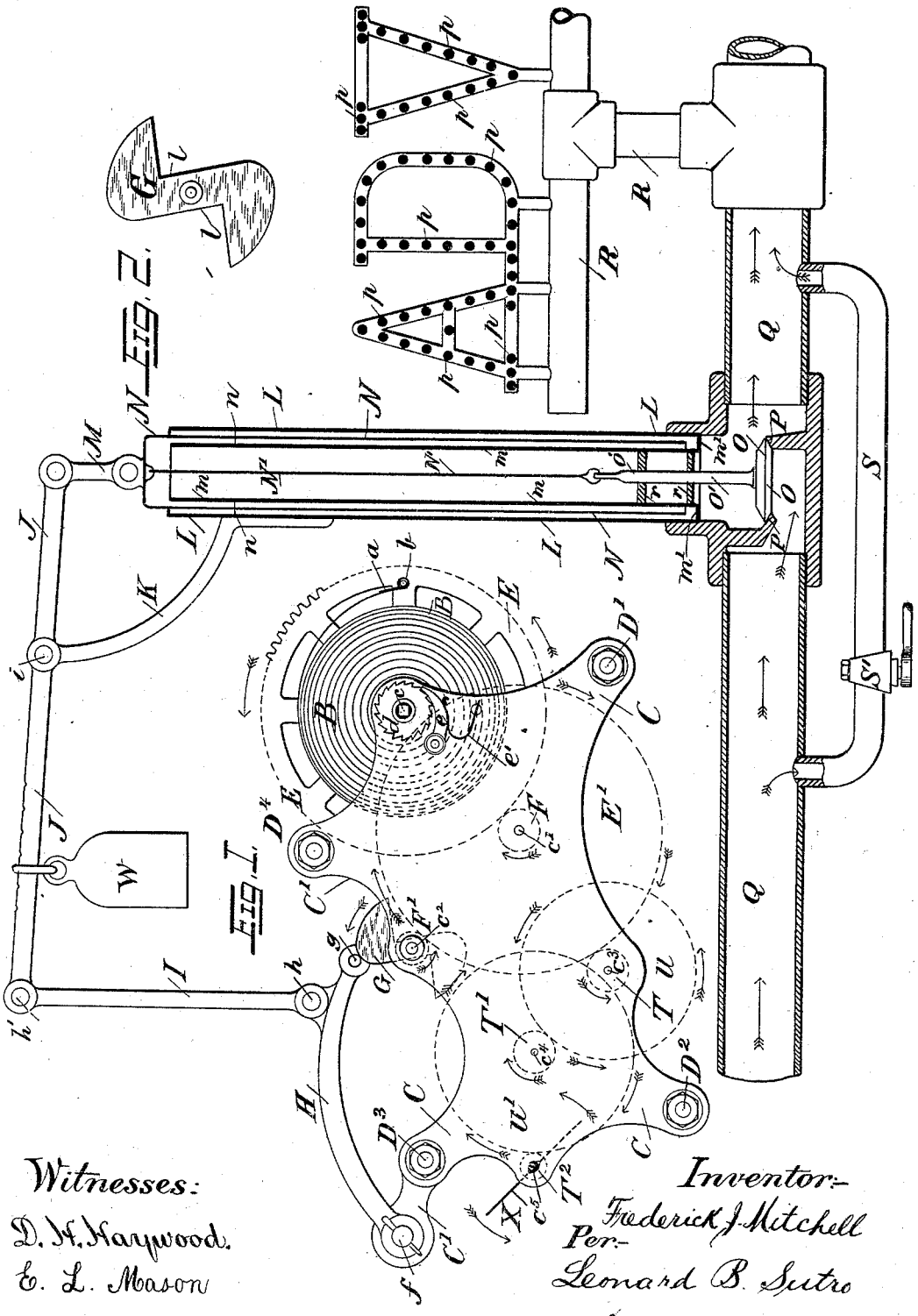
(No Model.)

F. J. MITCHELL.

FLASHING LIGHT ADVERTISING SIGN.

No. 422,819. Patented Mar. 4, 1890.



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UNITED STATES PATENT OFFICE.

FREDERICK J. MITCHELL, OF NEW YORK, N. Y.

FLASHING-LIGHT ADVERTISING-SIGN.

SPECIFICATION forming part of Letters Patent No. 422,819, dated March 4, 1890.

Application filed January 22, 1889. Serial No. 297,188. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. MITCHELL, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Flashing-Light Advertising-Signs, of which the following is a specification.

My invention relates to a novel system of advertising by means of the intermittent illumination of certain signs, symbols, or words, and of the mechanism to produce this result, the object of my invention being to that end to which all advertising points—namely, that of instantly arresting the attention of any casual observer—and I attain this as set forth in the following specification and as illustrated in the accompanying drawings, in which—

Figure 1 is a general view of the clock-work mechanism used for producing an irregular or intermittent supply of gas and the manner in which the same is used in connection with the object to be illuminated. Fig. 2 is an enlarged detail view of the cam used in the above-mentioned mechanism.

Similar letters refer to similar parts throughout the several views.

In Fig. 1 is seen a steel spring B, one end *a* of which is firmly fastened to a stationary pin *b*, riveted at one end to the first spur-wheel E. This spring is coiled around and ultimately fastened to a central spindle *c*. This and all other spindles used in the device find their bearings in two plates C and C′, forming, with the tie-bolts D′ D^2 D^3 D^4, the frame-work to which all the gearing and other mechanism is attached. The said spindle *c* is formed at one end into a square head, on which can be placed a key for the purpose of winding up the above-mentioned spring B. This spring is kept to the required tension in the ordinary manner by the use of a ratchet-wheel *d* and pawl *e*, the ratchet-wheel being keyed or otherwise fixed to the spindle *c*, and the pawl *e* working loose on a pin riveted to the outside of the front plate C and made to engage with the teeth of the ratchet-wheel *d* by means of a light spring *e*′. The aforesaid spur-wheel E is not fastened to the spindle *c*, but works loosely on it, depending on the spring B for its action. The teeth of the said spur-wheel E engage with those of the first pinion F. This pinion is keyed to the spindle *c*′, as is also the second spur-wheel E′. The pinion F and the second spur-wheel E′ are therefore both actuated by the first spur-wheel E. The second spur-wheel in turn engages with and actuates the second pinion F′, the said pinion F′ being keyed to the spindle c^2.

In the before-mentioned description I have set forth the construction of an ordinary clock-work train; but this, it must be understood, in no way affects the gist of my invention, as a motor of any description suitably constructed to operate the hereinafter-described mechanism will answer.

To the spindle c^2 is keyed a cam G. I have shown the cam G as being upon the spindle c^2; but this location may be altered and the cam placed on any of the speed-giving spindles of the motor used. The reason for locating the cam in the position shown is to get a certain predetermined speed of rotation for it, and this or any other speed may be obtained by locating it as before stated.

H is what may be termed a "rocking lever," pivoted at one end to a pin *f*, riveted in the back plate C′. At the other end is fixed a pin *g*. This pin is fixed so that it is about in the same vertical plane with the spindle c^2. When the cam G is in motion, the pin *g* follows its outline, thereby and by the assistance of a weight to be described imparting to the lever alternately an upward and a downward motion. A connecting-rod I, pivoted at *h* and *h*′, connects the lever H with another lever J above it. This lever J is hinged or pivoted at a point *i* to an arm K, extending from and fastened to the tube L. At the farther end of this lever is pivoted a connecting-link M, connecting the said lever J with a tube N. This tube N is constructed as desired of light metal and is closed at the upper end. The lower end, however, is open and a wire or rod N′ extends downward through it to the stem O′ of a valve O. This valve closes down onto a seat P, arranged in the union P′, and shuts off the supply of gas when closed. The valve O is kept in position and guided by two arms *r*, encircling the stem O′ and extending across the inner side *m* of the outer tube L. The said outer tube L is constructed double, the upper side being entirely open,

while the lower is closed at the part m', thus forming a complete hollow space or ring closed at the lower end. This space is filled up to nearly the top (shown in the sketch at n) with a liquid, preferably that of glycerine and water. Into this the second tube N is plunged, being allowed to pass downward, as seen by a glance at the accompanying drawings. This tube N preferably should not touch the outer tube L at all, and will therefore work quite freely in it; but at the same time it forms a gas-tight but frictionless joint, as it is impossible for the gas to pass through the liquid at n, and which I shall, for the sake of convenience, call a "water-cock." The gas is introduced into the main Q Q in the direction indicated by the arrows, thence up a branch pipe R into the small pipes of which the letters "A D V," in this case to be advertised, are constructed. These letters or any signs, words, designs, &c., to be advertised are constructed of fine gas-piping, into which gas burners or nibs are inserted as close as is required. These, being lighted, give at night the appearance of being written in fire. The valve O regulates the supply of gas, the valve itself being worked, as above mentioned, by the cam G. The cam in its present position entirely shuts off the supply of gas; but when the cam is a quarter of a turn farther around the pin g (following its outline by means of the weight W, transmitted through the connecting-rod I) falls to the part e, thereby, by means of the lever J, raising the tube N, and with it the valve O, thus turning the supply of gas on again. To prevent the supply of gas being entirely stopped by the closing of the valve O, a by-pass is formed in the pipe S, a small cock S′ regulating the supply of gas transmitted through the said pipe S. Enough, however, should be allowed to keep the jets at p just alight when the other supply through the valve O is shut off. When, therefore, the spring B is wound up and the power being transmitted through the gearing causes the cam G to revolve, the valve, and consequently the flow of gas, is alternately shut and opened, causing the before-mentioned intermittent illumination of the jets p. In the gearing the second spur-wheel E′ also actuates the pinion T of the intermediate gearing. This pinion is keyed with the wheel U to the spindle c^3. This intermediate wheel U actuates a second pinion T′. This pinion T′ is keyed with the second intermediate wheel U′ to another spindle c^4, and in turn engages with and operates a third pinion T^2, to which is attached a fly-fan X. This fly-fan X, with the pinion T^2, is fixed to a spindle c^5.

The above intermediate gearing is not essential to the actual working of the device, but is used, as in all clock-work mechanism, to regulate the speed.

I do not wish to confine myself to the use of a spring B as a motive power, as there are many other ways of producing the required effect—as, for instance, a weight and chain or an electric motor, or any other suitable device whatsoever causing an intermittent supply of gas, may be used; also, instead of gas, any gaseous substance or electricity may be used without departing from the spirit of my invention.

In the claims by the word "valve-chamber" I mean to include the union P′ and seat P, and by the term "water-cock" I mean to include the first tube L, sliding tube N, valve and stem O O′, and rod N′.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam actuated by said train, a valve and valve-chamber, the said cam and valve being operatively connected, and a main for supplying an illuminant to the valve-chamber and to the design, substantially as described.

2. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam actuated by said train, a valve and valve-chamber, the said cam and valve being operatively connected, a main for supplying an illuminant to the valve-chamber, and a by-pass connecting the said main and design, substantially as described.

3. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam actuated by said train, a valve-chamber P and P′, and a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, the said cam and water-cock being operatively connected, substantially as described.

4. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, mechanism for operatively connecting the water-cock and cam, a main Q Q, and a by-pass S, connecting the design and main, substantially as described.

5. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a fly-fan X for controlling said cam, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, the said cam and water-cock being operatively connected, substantially as described.

6. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a fly-fan X for controlling said cam, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, mechanism for operatively connecting the water-cock and cam, a main Q Q, and a by-pass S, connecting the design and main, substantially as described.

7. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, rocker-arm H, pivotally supported at one end and in operative contact with said cam at the other, and levers I and J, pivotally connected with arm H and water-cock, substantially as described.

8. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, rocker-arm H, pivotally supported at one end and in operative contact with said cam at the other, levers I and J, pivotally connected with the arm H and water-cock, and a weight W, located between the said cam and water-cock, substantially as described.

9. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a fly-fan X for controlling said cam, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, rocker-arm H, pivotally supported at one end and in operative contact with said cam at the other, and levers I and J, pivotally connected with the arm H and water-cock, substantially as described.

10. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a fly-fan X for controlling said cam, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and stem O O′, rocker-arm H, pivotally supported at one end and in operative contact with said cam at the other, levers I and J, pivotally connected with the arm H and water-cock, and a weight W, located between the said cam and water-cock, substantially as described.

11. In a flashing-light advertising device, the combination, with a design to be illuminated, of a clock-train, a cam G, actuated by said train, a fly-fan X for controlling said cam, a valve-chamber P and P′, a water-cock comprising the outer tube L, inner tube N, and valve and valve-stem O O′, rocker-arm H, pivotally supported at one end and in operative contact with said cam at the other, levers J and I, pivotally connected with the arm H and water-cock, and a weight W, located between the said cam and water-cock, substantially as described.

Signed at New York city, in the county of New York and State of New York, this 21st day of January, A. D. 1889.

FREDERICK J. MITCHELL.

Witnesses:
LEONARD B. SUTRO,
D. C. BEATTY.