

R. J. SHEEHY.

ELECTRIC MAGNETIC TIME AND DATE PRINTERS.

No. 179,874.

Patented July 18, 1876.

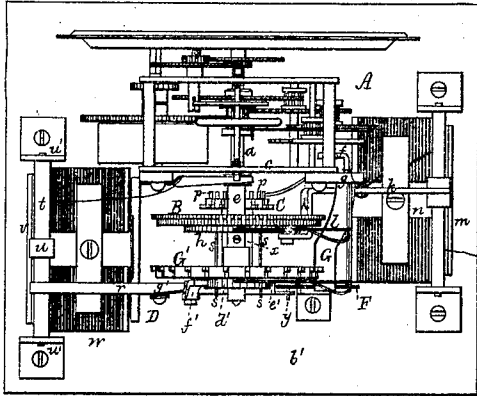


Fig. 1.

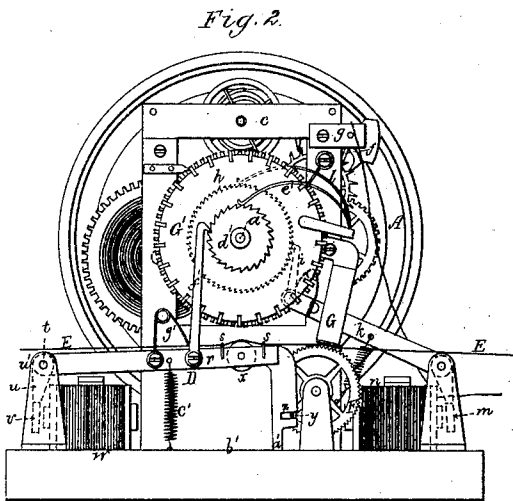


Fig. 2.

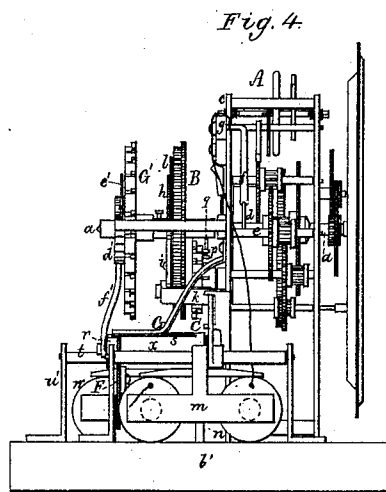


Fig. 4.

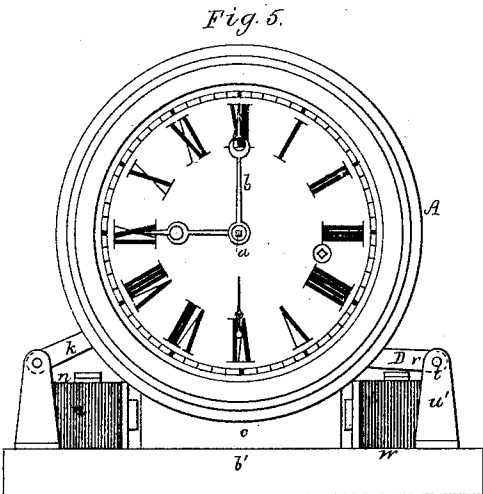


Fig. 5.

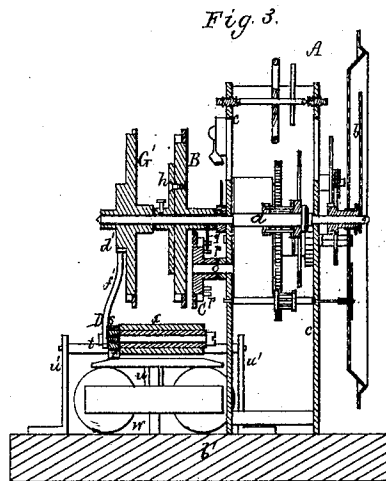


Fig. 3.

Witnesses:
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IMPROVEMENT IN ELECTRO-MAGNETIC TIME AND DATE PRINTERS.

Specification forming part of Letters Patent No. **179,874**, dated July 18, 1876; application filed February 21, 1876.

To all whom it may concern:

Be it known that I, ROBERT J. SHEEHY, of Boston, of the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to the printing on a sheet or strip of material characters representing the time indicated by a clock; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a top view, Fig. 2 a rear elevation, Fig. 3 a vertical and transverse section, Fig. 4 an end view, and Fig. 5 a front elevation, of a clock or time-piece provided with my invention.

My invention is a combination of a clock and time-printing mechanism, substantially as hereinafter described, with mechanism for printing or recording the periods of closing the circuit of the magnet for actuating the paper-supporter of the said printing mechanism.

In such drawings, the clock is shown at A. The main or central arbor *a* carrying the minute-hand *b* is extended some distance in rear of the clock-frame *c*, and has arranged on it concentrically a type-wheel, B, having its periphery furnished with a series of types for printing minutes from one to sixty. This type-wheel may be fastened to the arbor, so as to be revolved continuously by it; or it may be revolved intermittently by a separate mechanism controlled in its action by the clock.

The mechanism for effecting the intermittent revolution of the type-wheel may be thus explained. In the drawings, *d* is a metallic arm, projecting from that arbor *e* of the clock which makes one entire revolution in a minute of time. Over this arm is a metallic spring, *f*, extending down from an insulator or piece, *g*, of vulcanite or glass fixed to the clock-frame. During each revolution of the arm *d* it is to momentarily touch and pass by the spring *f*. The type-wheel to revolve freely on its arbor has a ratchet-wheel, *h*, fixed to it concentrically. With this ratchet-wheel an impelling-pawl, *i*, pivoted to one arm of a lever, *k*, works, there being to the ratchet-wheel a retaining spring or pawl, *l*. The lever *k* carries the armature *m* of an electro-magnet, *n*, all being arranged as shown. The circuit-wire of the

said magnet is to be connected with the clock-frame and also with the spring *f*. Consequently, whenever the said spring *f* is touched by the arm *d* the circuit will be closed, and the armature be attracted and moved by the magnet, whereby the printing or type wheel will be moved or revolved through an arc of six degrees of a circle. Alongside of the type-wheel, and below its arbor, is another type-wheel, C, to revolve on a separate arbor or pivot, *o*. The periphery of the wheel C is furnished with a series of types to print the hours, and there are twelve pins or teeth, *p*, projecting from one side of the wheel C and arranged in a circle at equal distances apart. A tooth, *q*, extending from the hub of the main type-wheel B, is intended to operate with the teeth *p*, in order to intermittently revolve the wheel C, or move it one division each hour. Underneath the type-wheels B and C is the movable paper carrier or supporter D, which consists of an arm, *r*, a roller, *x*, and two wires or prongs, *s s*, extending from said arm at right angles to it. The sheet or strip of paper E is run under the prongs and over the roller. The arm D extends from a shaft, *t*, supported in standards *u' u'*, and having another arm, *u*, projecting down from it. An armature, *v*, fixed to the arm *u*, is arranged in front of the poles of an electro-magnet, *w*, whose circuit is to be provided with a key for breaking and closing it. Every time the circuit is closed the armature will be attracted by the magnet, whereby the paper-supporter D will be moved up, so as to cause the paper to be forced against the type wheel or wheels, and be printed or impressed thereby. Such wheel or wheels should be provided with suitable means of keeping their types duly inked.

From the above it will be seen that whenever a person may desire to obtain an imprint showing the time of the clock, he has only to close the circuit of the last-mentioned electro-magnet, the result being that the paper will be printed with the number of the hour and that of the minute then indicated by the hands of the clock.

In order to effect the feeding of the paper along after each imprint, I make use of a proper feeding mechanism. That shown in the drawings consists of a toothed wheel, F, ar-

ranged under and against the paper, and below a presser, G, arranged over it, as shown. From this toothed wheel a pin or stud, y, extends into a slot, z, made in the supporter D, as represented. Such supporter is provided with a leg, a', to rest on the base b', and estop the downward movement of the supporter. Furthermore, the supporter is or may be furnished with a spring, c', to pull it down. During each upward movement of the supporter the feed-wheel will be partially revolved, and will feed the strip of paper forward, the said wheel, owing to the inclination of its teeth, slipping on the paper without moving it while the supporter may be descending.

I have applied to the clock and its time-printing mechanism, as described, a mechanism for printing or recording the periods of closing the circuit of the magnet for actuating the said paper-supporter. This mechanism consists, in part, of a third printing or type wheel, G', arranged on the main arbor of the clock, in manner as shown, and to freely revolve thereon. Fixed to the side of the wheel G' is a ratchet-wheel, d', provided with a retaining-spring, e', arranged as shown. A draw-pawl, f', pivoted to the paper-supporter, and provided with a spring, g', to press it (the said pawl) up to the ratchet-wheel, operates with the latter to intermittently revolve it, in order

to successively bring its types into position to print the paper.

Now, if we suppose the type-wheel G' to have twenty-five types, indicating the numbers 1 to 25, and there are in the circuit of the last-mentioned magnet twenty-five stations that are to be visited in succession by an individual at certain periods of time, there being to each station a key for closing the circuit, we shall find that the time of each closing of the circuit, as well as the number of the station where the closing was effected, will be printed on the paper.

The wheel G' and its actuating mechanism may also be used for various other useful purposes.

I claim—

The combination of the station type printing-wheel G', and its ratchet-wheel d' and draw-pawl f', with the clock or time piece A, its rotary time-printing wheel B or wheels B C, the paper-supporter D, and an electro-magnet, w, and armature v, for effecting the movements of the paper-supporter relative to the type printing-wheels, as specified.

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Witnesses:

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