(No Model.)

T. HOLLANDER.

CLOCK.

No. 259,688. Patented June 20, 1882.

Fig. 1.

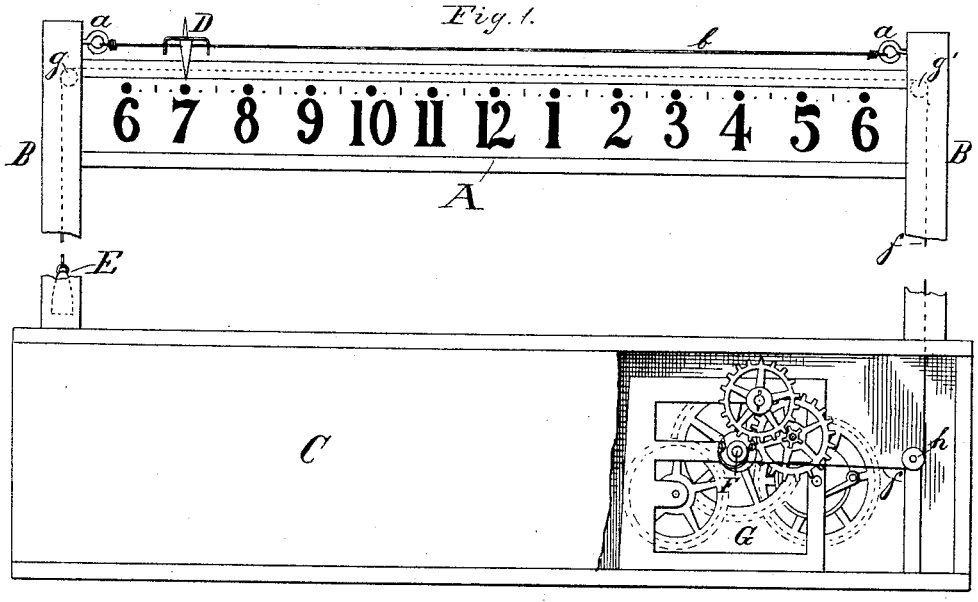


Fig. 2.

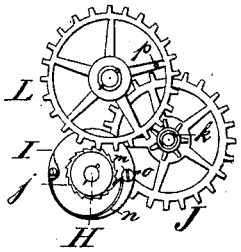


Fig. 3.

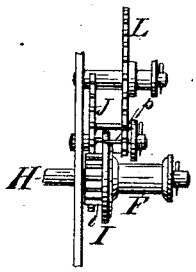


Fig. 4.

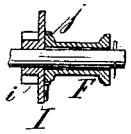


Fig. 5.

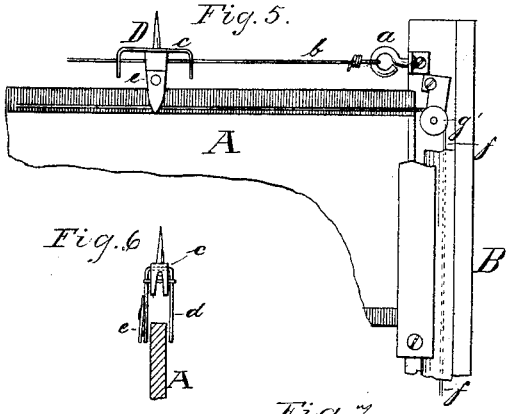
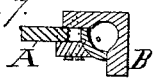


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

THEODORE HOLLANDER, OF CHICAGO, ILLINOIS.

CLOCK.

SPECIFICATION forming part of Letters Patent No. 259,688, dated June 20, 1882.

Application filed October 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, THEODORE HOLLANDER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Clocks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a clock that has a linear graduated and figured dial, over which a single index-hand is reciprocated by a suitable clock-work to show both hours and minutes; and the invention consists of the parts and combination of parts, as hereinafter described, and pointed out by the claims.

In the accompanying drawings, Figure 1 represents an elevation of the entire clock; Fig. 2, a front elevation of the wheels and winding-spool as an attachment to a clock-work that causes the reciprocating movement of the index-hand; Fig. 3, an end elevation of the same; Fig. 4, a longitudinal section of the winding-spool. Fig. 5 is an enlarged front elevation of one corner of the dial and of the indexed hand; Fig. 6, an end elevation of the index-hand, and Fig. 7 a cross-section of one of the dial-supporting corner-posts.

Like letters represent corresponding parts in all the figures.

A denotes the linear dial-plate, that is graduated into twelve hours, and each hour again into sixty minutes, each hour-mark being characterized by the proper figure in large type. This dial-plate I prefer to make of glass, that it may be illuminated at night, if desired.

B B are two columns, between which the dial A is secured. These columns rise from a box, C, that contains the clock-work. To the upper extremity of each column is secured an eye-screw, *a*, and between these eye-screws is stretched a wire, *b*, upon which the index-hand D is to ride. This index-hand D is composed of a saddle-plate, *c*, that rests upon the wire *b* and has an upwardly-projecting point for attaching a bird or any other image, and from one side is pending the index-point *d*, while from the opposite or rear side is pending a clamp-bar, *e*, for grasping the thread or cord *f*. This thread or cord *f* is guided over sheaves *g g'*, that are journaled in the columns B B and passed downward inside of each column B. To one end of this thread or cord *f* is suspended a weight, E, that has sufficient weight to hold the thread taut, and that will travel up and down inside of the column. The other end of the thread or cord *f* is passed over a sheave, *h*, which is journaled inside of the box C, and then is secured to a spool F. This spool F is of such size that its circumference is equal to the distance the index-hand has to travel in one hour, so that it will have to make one revolution during each hour of the day.

G is the clock-work, composed of a motor, train, and regulator of any usual construction, in which H is the spindle that otherwise would carry the minute-hand. Upon the projecting portion of this spindle is rigidly mounted a disk, I, having pinion *i*, and upon the end of the spindle is loosely sleeved the spool F, having fixed to one end a small wheel, *j*, with ratchet-teeth that is in contact with the disk I.

The teeth of the pinion *i* mesh with the teeth of a wheel, J, that turns upon a stud projecting from the clock-frame and has connected a pinion, *k*, and the teeth of this pinion *k* mesh with the teeth of a wheel, L, which turns upon another stud that also forms part of the clock-frame.

The relative proportions of the wheels *i*, J, *k*, and L are such that with twelve revolutions of pinion *i* the wheel L will make one revolution, which is in correspondence with the twelve-hour dial-plate.

Upon the face of disk I is pivoted a pawl, *m*, that is held in contact with the teeth of ratchet-wheel *j* by a spring, *n*. This pawl *m* has a tail-projection, *o*, and to one spoke of the wheel L is secured a stud, *p*, that will come into contact with the tail-projection *o* of pawl *m* once in twelve hours, when by the much more rapid rotation of the disk I the pawl will be disengaged until the pin *p* releases it again. This disengagement of the pawl is but of momentary duration.

The operation of the clock is as follows, to wit: The spool F being coupled to the disk I by the pawl *m* and ratchet-wheel *j*, it will rotate with the spindle H and will wind up the thread or cord *f*, that will move the index-hand D over the dial, thereby raising the weight E.

By the time said index-hand has reached the end of the dial-plate, or the mark that indicates the sixth hour, the wheel L has been rotated to bring the pin *p* in contact with the tail-projection *o*, when the pawl *m* will be disengaged from the ratchet-wheel *j*. Now, the spool F is set free to rotate on the spindle H, and will be turned in the reverse direction by the weight E sinking downward in the column B until the index-hand has been drawn to its commencing-point that carries the same hour-mark as the other end. By the time this change of position of the index-hand has been completed the tail-projection *o* of pawl *m* has passed the pin *p* of wheel L, when the pawl will be engaged again at once with the ratchet-wheel *j* by the action of spring *n*, and the thread *f* will commence again to be wound upon the spool F for the next twelve consecutive hours, when again the disengagement of the pawl is brought about, as before described.

The advantages of a straight dial-plate will be readily understood, on which the hours and minutes can be indicated with a certainty by a single index-hand, and in which all the figures and marks are placed in an upright position, as being easier to read and quicker to understand and recognize.

The dial-plate may be made of any size to suit its position, as long as the spool F is made of a corresponding diameter, and the dial may be any desired distance away from the clock-work, as long as the operating-thread is properly guided by the necessary sheaves to make the connection.

I am aware that it is not new to construct telegraph-clocks with linear dial-plates and weighted wires to which are attached pointers, so that on the descent of the weights said pointers shall indicate the hours upon such dial-plates; and such I do not claim.

What I claim is—

1. The combination, with a linear dial-plate graduated in twelve hours, columns or supports B B, and wire *b*, of a single index-hand, D, having index-point *d*, saddle-plate *c*, and clamp-bar *e*, weighted thread or cord *f*, and suitable clock-work, substantially as and for the purpose set forth.

2. The combination, with the linear dial-plate A, of the index-hand D, composed of index-point *d*, saddle-plate *c*, and clamp-bar *e*, wire *b*, weighted thread *f*, sheaves *g g'*, and spool F, rotated by a clock-work, all substantially as and for the purpose set forth.

3. The combination of the linear dial A, posts B B, wire *b*, index-hand D, constructed and adapted to ride upon said wire, as described, and reciprocated by thread or cord *f*, winding upon the spool F, clock-work G, and weight E, all substantially in the manner described and shown.

4. The combination, with the minute-spindle H, of a clock-work, G, pinion *i*, disk I, pawl *m*, with tail-projection *o*, and spring *n*, spool F, with ratchet-wheel *j*, and gears J, *k*, and L, with pin *p*, all substantially as and for the purpose shown and specified.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

THEODORE HOLLANDER.

Witnesses:
CHAS. J. GOOCH,
ROBT. BROWN.