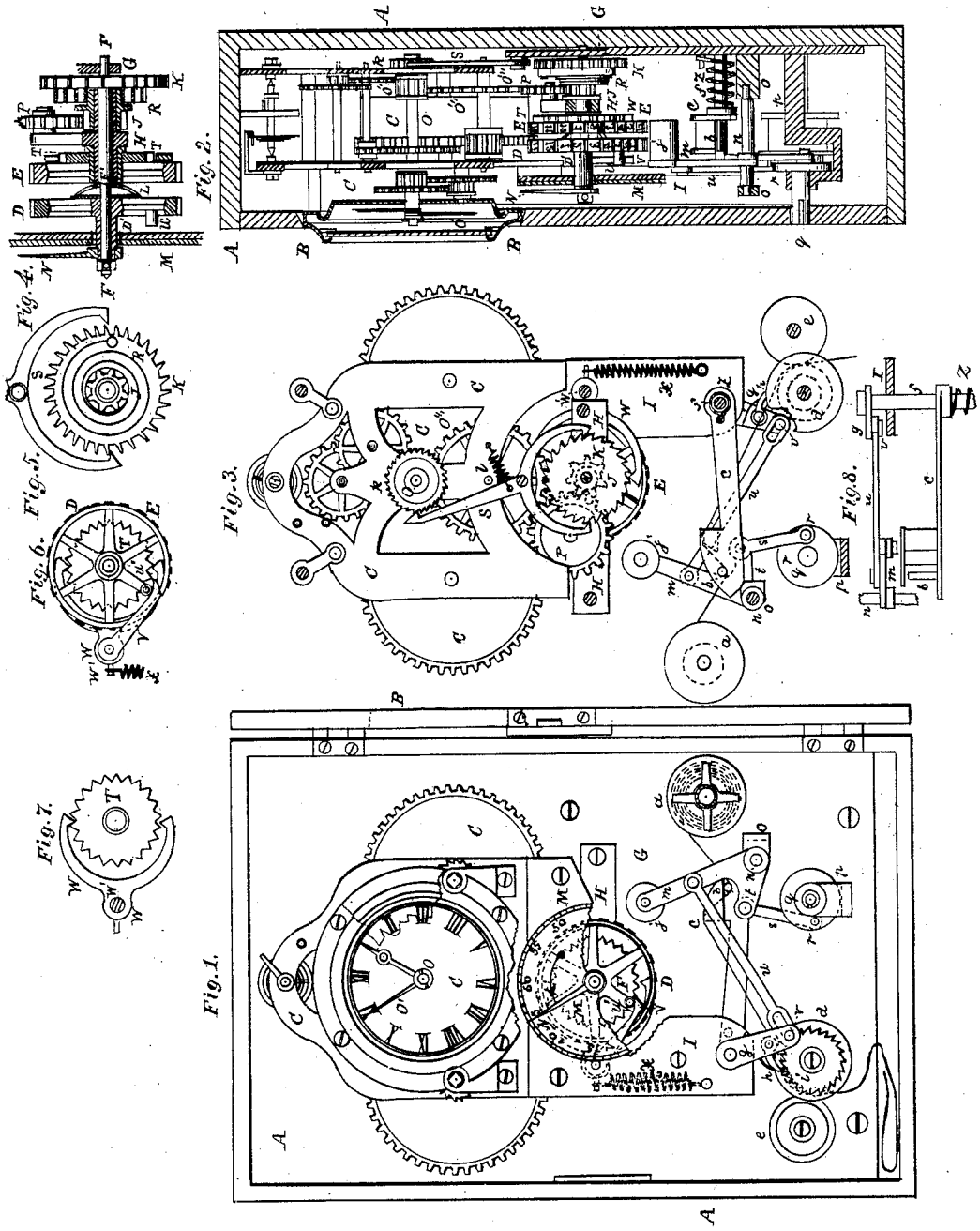
R. BOEKLEN.

Tell-Tale Clocks.

No. 199,181. Patented Jan. 15, 1878.



Witnesses.
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IMPROVEMENT IN TELL-TALE CLOCKS.

Specification forming part of Letters Patent No. **199,181**, dated January 15, 1878; application filed June 13, 1877.

To all whom it may concern:

Be it known that I, REINHOLD BOEKLEN, of the city of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Tell-Tale Clocks, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a front view of the time-register instrument with my improvements. The front door is shown opened. A portion of the time-dial and cover and of the registering-dial and frame on the front side are removed, to more clearly exhibit the working parts underneath. Fig. 2 is a vertical section of the same. Fig. 3 is a view of the rear of the works of the same. Fig. 4 is a detached vertical longitudinal central section of the type-wheels with the operating mechanism of the same. Fig. 5 is a detached face view of the escapement of the minute type-wheel of the same. Fig. 6 is a detached side view of the type-wheels. Fig. 7 is a detached side view of the escapement of the hour type-wheel. Fig. 8 is a top view of the printing hammer or presser of the same.

The object of this invention is to have a convenient time-registering instrument for controlling the call-time of the watchman and for analogous purposes, which instrument has provision for obtaining with it a reliable, easy-readable record of all the call-times of the watchman, and which record may be used as reference to the reliability of the watchman.

To this end I employ a clock or time movement of any suitable form, and connect with it, by appropriate mechanism, revolving type-wheels or equivalent devices, so arranged that both clock and type-wheels shall indicate the same time, or substantially the same. Both of these instruments are inclosed in a suitable locked case, so that no unauthorized person can have access thereto.

To more fully carry out the object of my invention, I add to the above an impression device, a suitable inking-instrument, and a mechanism to properly feed and space the material on which the record is to be made. With these devices suitably combined together in an organized mechanism, I employ an instrument to give motion to the feeder, inker, and presser, which instrument is operated by and is under the control of the watchman whose visits are to be recorded.

In the drawings, the letter A represents a suitable case of metal, or other material, in which the working parts are contained. Said case has a door with a lock, to close up the instrument and prevent unauthorized persons from disarranging the same. Said door is hinged to the case, and it has an opening, B, or window opposite the dial of the clock-movement C, protected with glass, through which the time of the day may be observed, and to see that the clock-movement is kept properly in motion.

The clock-movement shown is a duplex-spring marine-movement, intended to be wound every eight days. By said movement are automatically forwarded and moved correspondingly the type-wheels D and E, which are arranged over an arbor, F, immediately below the movement C, as shown. Said arbor has its rear bearing in an extension-plate, G, attached to the rear plate of the clock-movement, and it has its forward bearing in a bridge-piece, H. Both the rear and front plate of the clock-movement have an addition downward to support the lower working parts. The front plate I is, to a great extent, removed to exhibit said lower parts. Upon the periphery of the wheel D are formed the type-numbers for printing the minutes, and upon the periphery of the wheel E the type-numbers for printing the hours, of the day and night, and those for the hours of the day have an additional small type for a dot to distinguish them from those of the night. The cross-piece H or bridge has a tubular extension each way over the arbor F, as shown in Fig. 4. Over the extension of the same toward the forward side of the movement is fitted the hour type-wheel E, and over the extension of it to the rear is fitted a pinion, J. Both said pinion and wheel E are fitted to turn loosely upon said extensions or hubs of the cross-piece H. The arbor F has secured to its rear portion the escape-wheel K. Its forward end from the hub of the hour type-wheel E is made of a reduced diameter to form the shoulder F′. Upon this reduced end of said

arbor is fitted the type-wheel D for the printing of the minutes; but between the hub D′ of the same and the shoulder F′ of the arbor is employed a friction-spring, L, so that said wheel D is allowed to turn on the arbor loosely; but by the spring L the same is caused to turn with the shaft or arbor. The hub D′ extends forward through a dial-plate, M, secured upon the front plate I, and has a hand, N, secured thereupon. The object of the dial-plate M, hand N, and spring L is to enable the setting and adjusting of the type-wheels with their types to correspond with the hands of the clock-movement for the proper time of the day in starting the instrument.

O represents the minute-arbor of the clock-movement, upon which the minute-hand O′ of the same is carried by friction. Said arbor has the usual pinion O″ upon it, which is engaged by the gear O‴ upon the first arbor of the movement, and the said gear O‴ is used to transmit motion to the minute type-wheel D by means of an intermediate gear, P, which engages the pinion J aforesaid, and also the gear O‴, and by means of a coiled spring, R, having its inner end secured to said pinion J, and its outer end to the escape-wheel K aforesaid upon the arbor F. The intermediate gear P rotates upon a fixed stud secured through an upward eye formed on the bridge-piece H. The pinion J is of equal diameter with the pinion O″, to obtain equal speed with both arbors, O and F; but, in order that the type-wheel should change rapidly from type to type at the termination of the minute or minutes, the escape-wheel K, the spring R, and an escape-lever, S, engaging the wheel K, are employed. To vibrate the escape-lever S a secondary escape-wheel, *k*, is employed upon the rear end of the minute-arbor O, as shown. The said wheel *k* has one tooth for each type of the wheel D, and the wheel D has a type for each minute; or it may have it only for each two or more minutes; but it is preferable for each minute. The escape-lever S has a fork to engage the escape-wheel K on each side, as shown on its lower portion. Its upper arm is made single, and with a proper hook-shaped end or nose to engage the teeth of the wheel *k*. A small spring, *l*, is employed to draw said lever against said wheel *k*. Said lever may be made with a forked arm on its upper portion to engage both sides of the wheel *k* the same as its lower end, by which means the spring *l* may be dispensed with; and the motion to vibrate said lever S at the desired period of one or more minutes may be obtained by cranks, cams, or any suitable means, and from any convenient moving part of the clock-movement. The number of teeth in the escape-wheel K is made to correspond with and allow the proper motion from type to type of the wheel D at every release of one of its teeth from the engaged pallet of the lever S.

The hour type-wheel E has also an escape-wheel, T, which is secured to it, and said escape-wheel T may be preferred to be connected in similar manner by a coiled spring and a loose pinion driven from a proper-speeded gear of the movement for the one revolution per twenty-four hours; or it may be connected and geared, as shown, from the minute type-wheel D, which has one stud, U′, projecting on its forward side, to engage a lever-arm, V, which is secured, together with an escape lever or fork, W, upon one small arbor, W′, having bearings in the front and rear plates of the movement.

The escape-wheel T has a tooth for each of the types of the wheel E, and the pallets of the fork and the teeth of the escape-wheel are shaped tangential on both working-faces, to cause impulse to the wheel by the vibration of the pallets into the teeth of the wheel.

By means of the stud U′ and the arm V the said fork and lever W are forced down, and so cause the wheel E to advance half the distance from type to type, and by means of a spring, X, applied, by an arm opposite, to the said fork, the arbor W′, with said fork W, is reversed, and the contact of the pallet engaged causes said wheel E to advance the remaining distance from type to type.

a represents a bobbin, which has wound upon it a strip of paper, upon which the record of the watchman's calls are printed. The loose end of said strip is passed under a stud, *b*, over the face of a printing-presser, *c*, from right to left hand, downward and through between the peripheries of two rollers, *d* and *e*. From there it may be carried and wound up upon a spring-roller; or it may be left loose to collect in the lower part of the case A. The presser *c* has its working-face covered with felt or other suitable elastic material. Said presser is made with an arbor, *f*, having its bearings in the front and back plate of the movement, so that the face of said presser may be forced against the type of the wheels D and E. The said arbor *f* has, besides the presser *c*, also a crank, *g*, secured upon it, for operating the presser, and also the feed-roller *d*, by means of a pawl, *h*, which engages the teeth of a ratchet-wheel, *i*, secured on the end of said roller *d*.

j represents a roller of felt or other material, impregnated with the proper printing-ink for inking the type for each print. Said roller is attached to a lever, *m*, which has a short arbor, *n*, for its fulcrum, supported in bearings in the stationary standard *o* secured to the rear plate G. In a secondary similar standard, *p*, secured in said plate below the standard *o*, is arranged a short shaft, *q*, which has a hollow end protruding into the door of the case A. Said hollow end has a slot suitable for a key to enter, which the watchman carries with him, and which key has a proper nose to enter the said slot, and thereby cause the turning of said shaft *q*, which is properly guided in said standard, in lateral and also in longitudinal direction. On the inner end of said shaft is secured a crank and pin, *r*, which is connected by means of a link, *s*, with the short arm *t* of the lever *m*; and the crank

g is connected with the lever m by means of the link u, which has a slotted end to engage over a stud, v, of said crank g, so that by turning with the key the shaft q the ink-roller j passes and inks the types proper for printing upon. With a succeeding motion by the crank r the stud v is engaged by the link u. The presser c is thereby raised to the inked type. The ink-roller being at this time forced aside, the portion of the strip of paper upon the working-face of the presser is pressed, and is successfully printed with the type. The spring z employed on the presser over its arbor causes the presser to recede and the pawl h to engage the ratchet i, and, in consequence, the feed of the paper strip through the rollers d and e.

Instead of a strip of paper, short slips may be allowed to feed in between said presser and the type-wheels.

The manner of operating the presser may be varied. Nevertheless the said presser and ink-roller are so connected or operated together that they will alternately meet the same type, substantially as herein shown.

By the instrument with the aforesaid improvements a printed record of every day's calls of the watchman is obtained without any daily labor from the employer, and in convenient manner. Said record may be used as evidence of the reliability of the watchman, and as reference for the insurer and fire-insurance company.

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

1. The combination of a time-movement, a type wheel or wheels, an impression device, a feeder, an inker, and an instrument for successively operating the inking impression and feeding devices, for the purpose set forth.

2. The combination of a time-movement, a type-wheel, an impression device, a feeder, an inker, and an instrument for moving the inking device over the face of the type at each impression, substantially as set forth.

3. The combination of a time-movement with the type-wheel D, the pinion J, spring R, escape-wheel K, ink-roller j, and the presser c, substantially as and for the purpose set forth.

4. The combination of the shaft q, crank r, link s, lever t m, and ink-roller j, substantially as described.

5. The combination of the shaft q, crank r, link s, lever t m, link u, crank g, arbor f, spring z, pawl h, ratchet-wheel i, and feed-roller d, substantially as set forth.

6. The combination of shaft q, crank r, link s, lever t m, link u, crank g, arbor f, and presser C, substantially as described.

7. The combination of the dial M, hand N, sleeve D′, type-wheels D E, wheel T, levers W V, spring X, and stud w', substantially as specified.

8. The combination of the time-movement with the type-wheel D, the pinion J, spring R, and the escape-wheel K, substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand this 29th day of May, 1877.

REINHOLD BOEKLEN.

In presence of—

FRIEDRICH MEYER,

LOUIS T. SCHOLL.